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ABSTRACT

One of a series of the EDSP (Educational Dissemination Studies Program) interrelated studies, this report describes the content of the ERIC database for five equity groups including the physically and mentally handicapped, Blacks, Hispanics, and women; and addresses the question of how much can be learned if the analysis is confined to examination of citations and abstracts rather than the literature itself. Although questions of adequacy or relevance are not addressed, the study does provide much detail regarding the structural characteristics of the ERIC journal and document literature. Posting data for CIJE and RIE are examined for each of the five equity groups within topical areas of attitudes, employment, counseling, and curriculum. Each of the 20 resulting combinations is analyzed in terms of publication data classifications and comparisons are made based on content analyses among the five equity groups. RIE data are also examined in terms of cross classification of content dimensions. The study establishes significant relationships among the various dimensions and concludes that literature posted to each of the five groups is significantly different in most of the content categories. (Author/RAA)

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INFORMATION EQUITY ISSUES IN EDUCATION:
THE ERIC DATA BASE COVERAGE FOR FIVE GROUPS

Paul D. Hood

July 1980

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Educational Dissemination Studies Program
FAR WEST LABORATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT

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ABSTRACT

This study addresses a substantive and a methodological question. The substantive question is concerned with describing the content of the ERIC data base for five equity groups including the physically and the mentally handicapped, Blacks, Hispanics, and women. The methodological question is how much can be learned if the analysis is confined to examination of citations and abstracts rather than to examination of the literature itself. Although questions of adequacy or relevance are not addressed, the study does provide much detail regarding the structural characteristics of the ERIC journal and document literature, e.g., how much literature is there, both in terms of articles/documents and in terms of pages; what kinds and quantities of publications are represented, what types of agencies have sponsored the work; where was it performed; has the collection changed in character over time; does the literature that focuses on one equity group differ from the literature that focuses on another equity group; if so, in what ways.

Posting data for the total journal collection (CIJE) and the total document collection (RIE) are examined for each of the five equity groups, and also for combinations of groups with each of four broad topical areas (attitudes, employment, counseling, and curriculum). Then for each of the twenty group/topic combinations, samples of CIJE and RIE entries were selected and content analyzed in terms of a number of classifications, e.g., date of publication, page length, sex of author, sponsor. Comparisons among the five equity groups are made on each content analysis dimension for both the CIJE and the RIE samples. The RIE data are also examined in terms of cross classifications of all pairs of content dimensions (i.e., groups, topics, publication date, sponsor, performing institution, type of publication, copy availability, authorship, number of equity groups identified, page length). This analysis demonstrates that there are a very large number of significant relationships among the dimensions.

The study also conclusively demonstrates that the literature posted to each of the five groups is significantly different in terms of most of the content analysis categories.

FOREWORD

The Educational Dissemination Studies Program (EDSP) has three general objectives: 1) to establish efficient means for analyzing and communicating the status, needs, and accomplishments of educational dissemination performers; 2) to increase the quantity of, and access to knowledge pertaining to the educational dissemination process; and 3) to establish a capacity for organizing and conducting special studies contributing to the improvement of educational dissemination as a regional and nationwide effort.

This report is one of a series of EDSP special studies concerned with conceptualization and exploration of information equity issues in education. This series of equity studies began in the Summer of 1978 with a mini-conference held at the Far West Laboratory. Representatives of women's, various minority and ethnic groups, the physically handicapped, and the geographically isolated made presentations describing information needs, barriers, and problems confronted by the various groups. Subsequent to the conference, Dr. William Paisley, Institute for Communication Research, Stanford University, and Ms. Mary Kathryn Cirksena and Dr. Matilda Butler, both of the Women's Educational Equity Communications Network, Far West Laboratory, completed two pilot studies. In one study, they examined the geographic distribution of information programs throughout the U.S. by aggregating selected data on information programs, ERIC collections, location of information users, and other demographic indicators at the level of 251 Standard Metropolitan Statistical Areas (SMSAs) and 334 SMSA/Rural Areas. Cross tabulation and multiple correlation analyses of these data demonstrated that resources such as information programs and ERIC collections are not equitably distributed throughout the United States.

In the second study, they examined the ERIC data base coverage for five equity groups in each of eight substantive areas to determine the total number of documents/articles available for each group by substantive area. This analysis demonstrated that there are large differences among the groups in the coverage of various topics and suggested the possibility that the literature pertaining to some groups may have less depth and breadth, document for document, than literature pertaining to other groups.

On the basis of this exploratory work, EDSP proposed a set of four interrelated strands of study activity: 1) analyzing the conceptual and policy issues implied by information equity; 2) conducting more detailed analysis of the documentary knowledge base; 3) developing statistical data on geographic distribution of indicators of knowledge production, dissemination, and utilization; and 4) collecting case studies and other information describing the needs/uses of information by specific equity groups.

Glen Harvey (1980) addressed the first strand with a major conceptual analysis in four sections. Part I analyzes the concepts of equality and equity, and identifies the possible interpretation attributed to

each. Part II analyzes information equity, focusing on the clarification of information-related concepts and the synthesis of these concepts with various equality and equity interpretations. Part III enumerates and explains the more practically oriented issues involving information equity policy decisions and indicates the connection between conceptual and practical considerations. Part IV discusses general policy recommendations, indicating the direction in which information equity policy statements and programs should proceed and suggesting the goals for which to aim.

The current report is concerned with the second strand of study activities--conducting more detailed analysis of the documentary knowledge base.

ACKNOWLEDGEMENTS

This study is a direct follow-up of the earlier data base study by Paisley, Cirksena, and Butler (1979). We owe Dr. William Paisley, Institute for Communication Research, Stanford University our special thanks for consulting with us on this follow-up study, particularly in regard to selection of subject matter content clusters, and equity groups. Jean Marzone of the Women's Educational Equity Communications Network at the Far West Laboratory played a significant role in accomplishing the on-line search of the ERIC data base, using the Lockheed DIALOG system. Through her skill and ingenuity in using the DIALOG system, we were able to pull 40 systematic samples according to study design specifications. Alice Logan, EDSP staff member, deserves special mention for her careful work in locating, copying, and annotating CIJE citations and in performing the search for circulation data on more than 200 journals that were included in the sample. We especially acknowledge the following information centers that helped us to locate journal circulation data: San Mateo Education Resource Center; ERIC Document Reproduction Service; and the following ERIC Clearinghouses: Rural Education and Small Schools; Higher Education; Adult, Career, and Vocational Education; Counseling and Personnel Services; Handicapped and Gifted Children; Languages and Linguistics; Social Studies/Social Science Education; Teacher Education; and Urban Education.

We thank Rosemary Keppard, who keypunched our data, and Jaclyn Silva and Robert Johnson, who compiled our computer programs and ran the data jobs. Sue McKibbin and Ursula Hoffman assisted in searching circulation sources and in resolving coding problems. Design of the study, coding of the ED document sample, statistical analysis, and report preparation were performed by Paul Hood. Alice Logan typed the report and prepared it for reproduction.

I. EXECUTIVE SUMMARY

A. Introduction

Information equity is concerned with the equity of opportunity to obtain and use information. In the field of education, there are many groups including racial and ethnic minorities, physically and mentally disabled, migrant and rural populations, institutionalized populations, low income groups, women, non-English speaking immigrants, and others who may encounter severe problems in finding, understanding, and using educational information they may need. Along a continuum of information service opportunity, shortcomings can be traced to inavailability of relevant information in the knowledge base; a lack of derivative information products; limited arrangements for distribution or provision of personal services; and ultimately to lack of skill, experience, training or incentives on the part of information users. This study focuses on aspects of the first part of this continuum. The major purpose of the study is to discover what simple levels of content analysis of citations and abstracts can tell us about the content of education's largest single data base, ERIC, with respect to five selected equity groups.

The study does not deal with questions concerning the quality or relevance of the ERIC literature, but rather with questions concerning the structural characteristics of the literature, e.g., how much literature is there; what kind and quantities of publications are represented; who has sponsored the work; where was it performed; has the collection changed in character over time; does the literature that focuses on one equity group differ from the literature that focuses on another equity group; if so, in what ways; do time trends or group differences have implications for ERIC acquisition or processing policy, etc.

B. Design of the Study

Results of a previous exploratory study were used to select five equity groups (physically handicapped, mentally handicapped, Blacks, Hispanics, and women) and four topical areas (attitudes, employment, counseling, and curriculum). A multi-hour search of the data base using the DIALOG computer system was made to obtain counts and complete accession number listings of all documents/articles for each of the twenty combinations of five groups and four topics. Systematic samples of journal articles indexed in the Current Index to Journals in Education (CIJE) and of documents indexed in Research in Education (RIE) were then drawn from each of the twenty group/topic CIJE and RIE accession listings. Five hundred RIE entries and 483 CIJE entries were included in the total sample.

The CIJE entries were classified by topic, group, year of publication, number of pages, journal title, and ERIC Clearinghous that made the accession. RIE entires were classified by topic, group, year of publication, number of pages, type of publication, type of sponsor type of performing agency, state location, microfiche and hard copy availability, sex of author, and number of equity groups identified.

C. ERIC Data Base Coverage Summary

By the Spring of 1980, the ERIC data base exceeded three hundred and ninety thousand articles/documents. A total of over thirty-four thousand postings in the data base were made to the five equity groups considered in the study: women, 16,573 articles/documents; Blacks 6,827; Hispanics, 3,603; mentally handicapped, 5,920; and physically handicapped, 1,486. Four substantive topics were searched for each of these five groups. The topics of attitudes, employment, and counseling were selected because a previous study indicated that literature on these topics tended to be more frequently indexed to special groups. A fourth topic, curriculum, was selected as representative of topics which are less often indexed to special groups. Although there were several differences between the special groups searched in the preliminary study and the current study, this pattern of topical over- and under-posting for special groups was confirmed for both the CIJE article and the RIE document literature. For all ERIC literature (CIJE plus RIE), the percentage of the postings to the five groups is approximately twice as high for attitude topics (18.8% vs. 9.5%) and for employment topics (9.2% vs. 4.3%), and half as high for curriculum topics (4.9% vs. 10.3%) when compared to the percentage of postings to topics for all ERIC articles/documents. Although the difference in percentages (6.0% vs. 4.6%) is less for the counseling topic, it is in the predicted direction of higher percentage of postings for the special groups.

Although only four of potentially hundreds of topics were examined, it is evident that these four account for sizable proportions of the literature posted to the five groups, amounting to nearly a third of the sum of the postings for the five groups for CIJE articles and nearly half of the group postings for RIE documents.

There are remarkable differences between the CIJE and RIE literature in the amounts and proportions of the literature posted to topics and to groups. In numbers and in percentages, there are substantially more postings to curriculum and to employment topics in RIE than in CIJE. There are also remarkably higher numbers and percentages of postings to Hispanics and Blacks in RIE than in CIJE. However, the number of postings to mentally handicapped is significantly less in RIE than in CIJE.

Aside from the general tendency for most groups to receive more postings for attitude, employment, and occasionally counseling topics, and to receive fewer postings for curriculum topics, there are few similarities but many differences among the five groups. These differences are especially marked when internal comparisons are made among individual postings for the twenty combinations of five groups and four topics. Chi square tests of independence (between groups and topics)were highly significant for both the CIJE and RIE postings, with 12 of the 20 cells in the CIJE analysis and 15 of the 20 cells in the RIE analysis displaying highly significant discrepancies between expected and actual numbers of postings. Although there are gross similarities between the CIJE and the RIE chi square analyses (thirteen of the twenty corresponding pairs of topic/group cells were either both insignificant or were both significant and with the same

sign), there are no very striking patterns of similarity among groups or among topics in the actual/expected frequency discrepancy patterns for either CIJE or RIE. We are thus forced to conclude that generalizations from one to another equity group in terms of the amounts or proportions of CIJE or RIE postings to various topics, or from one topic to another topic in terms of proportions of postings to various groups can be made only very roughly, and with many errors.

D. Summary of CIJE Content Analysis

The CIJE journal samples display significant group or topic differences in every area we examined, namely: average date of publication, average page length, number of journal titles represented in the samples, sample circulation size, and clearinghouse distribution.

With publication dates ranging from 1969 to 1979, the average CIJE article in the total sample is early 1974; however, the publication date averages for women and for physically handicapped are at least a year more recent than the averages of the other three groups. Overall, CIJE articles average approximately seven pages in length. However the articles for both handicapped groups average less than six pages, while those for Hispanics and women average over eight pages. Articles on counseling topics average approximately six pages, but those for employment topics average over eight pages.

There are substantial differences in how many journals are represented in these samples and also in how widely they are circulated. Generally, the journal literature in the field of education is highly dispersed. This is certainly true for most of these group/topic samples. The 483 CIJE articles included in this study were found in over two hundred different journals. Typically, one would need to subscribe to six or seven journals per group/topic combination in order to find even half the articles in each sample of 25 articles. However there is a wide range (2 to 13 journal titles) to achieve "50% coverage." To cover all 25 articles in each group/topic sample, one must consult 8 to 25 different journals. There are also vast differences in circulation size. A significant topic by group interaction effect makes it difficult to generalize concerning overall circulation or concerning differences among topic or among groups. Moreover, the extreme differences among circulation figures for individual journals (500 to 1,800,000) tend to seriously distort the arithmetic averages. Median circulations for the 20 topic/group samples range from 2,500 to 24,000, indicating that there are vastly different levels of circulation.

Given the specialization of the ERIC clearinghouses, and the specific topics and groups that were considered in these CIJE samples, it comes as no surprise to find greatly different proportional contributions. In fact two-thirds of the total sample of articles were processed by only four clearinghouses, but all sixteen clearinghouses are represented in the sample. Despite the heavy concentration in a few clearinghouses, it is noted that in only one group (the physically handicapped) and in only one topical area (counseling) does a single clearinghouse process as much as half the articles included in these samples.

E. Summary of RIE Content Analysis Results for Group Differences

Because many more variables were coded in the content analysis of Research in Education (RIE) documents, the results of the RIE analysis are much more extensive than those summarized in the previous section on CIJE articles. The analysis shows that the samples of RIE documents for the five equity groups are significantly different along a number of dimensions including: average age of the literature, sponsorship, type of institutional performer, type of document, authorship, and single/multiple equity group focus of the documents' contents. Only two characteristics showed no difference among groups: average page length and availabiity in microfiche or hardcopy.

As of early 1980, the average publication date for the RIE documents in these samples was early 1972, but the women's literature have a significantly more recent average (early 1974), while the mentally handicapped average is significantly earlier (late 1970). The average length for all RIE documents in the sample is 107 pages. There are no differences for groups; however, document length does vary with topic, with an average of 83 pages for attitude topics and 132 pages for employment topics.

Who sponsors the work reported in RIE documents, which types of institutions perform the work, and what types of publications/formats it appears in, all vary significantly over the five groups. Overall, more than forty percent of the sample was federally sponsored, and federal, state, and local agencies together account for 55 percent of all documents. There are several differences among the samples of the five groups, e.g., a significantly higher proportion of documents in the women's sample are produced by university based authors; a larger than expected amount of the physically handicapped samples are produced by non-profit/for-profit agencies; and publishers are notable contributors to the mentally handicapped sample. RIE contains a wide variety of types of documents. When classified by eight specific and one miscellaneous classifications, we find that over one-fourth of the documents are research reports. Research reports, project descriptions, and speeches constitute sixty percent of the total sample of 500 RIE documents. There are several significant differences among the groups in the percentage of documents that are of one type or another. For example, the women's sample contains almost twice the percentage (37%) of research reports when compared to the physically handicapped (20%). There are no overall differences among the five groups in availability in either microfiche or hardcopy forms. Over three-fourths of the sample can be ordered from central facilities (e.g., EDRS, NTIS) in full-size hardcopy, and from 80 to 90 percent of the samples for the five groups are available in microfiche.

The samples of documents for the five groups differ in their author identification, with substantially more individual authors for the women and Black samples, and a larger percentage of corporate (anonymous) authorship for the handicapped. There is a complete sex reversal in the authorship of women's documents as compared to the other four groups. While 64 percent of the first authors of the women's samples are female, 67 to 71 percent of the first authors in the other four samples are male. Finally, there are some substantial differences

among the five groups in the singularity of focus of their document literature. For example, nearly two-thirds of the samples for mentally handicapped and women (65% and 61% respectively) focus exclusively on those groups, while only one-third (32%) of the physically handicapped sample deals exclusively with that group.

F. Summary of the Analysis of Interrelationships Among Other RIE Content Analysis Variables

All of the variables employed in the RIE content analysis display significant relations with some, often with most of the other variables. Indeed, the relationships are so numerous and complex that it soon becomes obvious why there are few, if any, broad generalizations that one can make from one equity group sample to another. There is clear evidence that the RIE data base has changed in composition over time, in the amount of literature indexed to various equity groups, and in the proportions of types of documents accessed, type of sponsorship represented, type of institutional performers, in the availability of documents, and even in the proportions of documents authored by women first (and second) authors. Type of document is a highly significant variable that is complexly related to type of sponsor and type of performer. Proportions of all three types have changed over time, and are proportionally different in many equity groups, topic, and other types of cross classifications. Although the many significant interrelationships among variables seem to preclude finding simple relationships, they also point to a number of methodological refinements that could make futures studies of the ERIC data base more efficient and informative.

G. Conclusions

A few of the most significant conclusions are these:

1. The literature for the five equity groups is different along many dimensions including sheer quantity, proportions found in CIJE and RIE, average age, type of publication, sponsorship, performer institution, authorship, page length, etc. The differences are so many, and in some cases so large, that each equity group must be examined separately, rather than generalizing from one group to another. Given these results, there seems to be no firm basis for predicting accurately what the literature for other equity groups may look like except in the grossest terms. Until one can show that there are, in fact, few important differences in the content of the literature for two or more equity groups, the most prudent course of action may be to assume that the ERIC literature for each group is different until it has been proven otherwise. On the other hand, this study has demonstrated that samples as small as one hundred articles/documents per group may be sufficient to provide a general profile that can be compared with the data for the five groups examined in this report.

2. Although comparisons can be attempted based on random samples of all the literature posted to equity groups, this study has amply demonstrated that controlling for topic is desirable, if not essential. The data pertaining to specific group/topic combinations is frequently significantly different from the data found for other topics posted to the same equity group or for other equity groups posted to the same topic.

3. Although some very general similarities in proportions of postings to groups and to topics were found when comparing CIJE and RIE, there are a number of remarkable differences, e.g., in terms of numbers and of proportions of postings, RIE is more prone to contain documents posted to equity groups than is CIJE.

4. There is evidence that both CIJE and RIE postings have changed over time. From an equity point of view, most of the evidence is positive. One of the simplest, but starkly compelling findings is that the proportion of female authors has risen markedly over a fifteen year period. From a technical point of view, it may be important to know that there are many significant time trend differences in types of documents accessed, in types of sponsors, and in types of performers. This is particularly true for RIE. Searches that focus on the more recent literature will find a different literature than will be found if the entire data base is searched, e.g., more speeches, more federally sponsored reports, more university produced documents, more documents that can be obtained in hard copy, more documents authored by women.

5. Although the quite recent incorporation of publication codes in RIE entries makes it impossible to employ this classification in retrospective searches that go back more than a year or two, this study has amply demonstrated the need to take publication type into account in any comparative analysis. The publication type classification was significantly related to every other variable considered in the RIE content analysis. The publication codes will be highly valuable tools for search and for analysis uses.

6. It must be emphasized that this study provides no data on how good, how adequate, or how relevant the ERIC literature may be. However, it does provide a detailed analysis of how the ERIC literature is structured for five significant equity groups.

II. INTRODUCTION

A. Information Equity and the Knowledge Base

The term "information equity" is new to the field of dissemination and information science. It seems to have been coined as the title of a mini-conference held under National Institute of Education sponsorship at the Far West Laboratory in the summer of 1978. The following winter, a national conference on information equity was held in Washington, DC, again under NIE sponsorship. In a paper presented at the Washington conference, Paisley, Cirksena, and Butler noted that in the "knowledge society" of contemporary America, resources and power accrue to those who have information, and that information accrues to those who have resources and power. This circle of cause and effect, especially with the introduction of new information technology, has tended to widen the gap between information "haves" and "have-nots." Information equity is concerned with the equity of opportunity to obtain and use information. Along a continuum of information service opportunity, shortcomings can be traced to inavailability of relevant information in the knowledge base; a lack of derivative information products; limited arrangements for distribution or interpersonal services; and, finally, to lack of skill, experience, training, or incentives on the part of users. While other EDSP information equity studies will address later portions of this continuum, this study focuses on aspects of the first part of this continuum--a question of what is in the knowledge base. This study does not address the difficult question of "relevance." Rather, its immediate concern is to discover what simple levels of content analysis of citations and abstracts can tell us about the content of education's largest single data base, the ERIC data base, with respect to selected equity groups. This study does not deal with questions concerning how good or relevant this literature might be with respect to some set of information needs, but rather with questions about the content of the literature per se, e.g.: how much literature is there; what kinds of publications are represented; who has sponsored the work; where was it performed; has the collection changed in character over time; does the literature that focuses on one equity group differ from the literature that focuses on another group; if so, in what ways; do these time trends or group differences have implications for ERIC acquisition policy, etc.

B. Review of the Previous EDSP Study of the ERIC Data Base

In a previous exploratory study of the ERIC data base (Paisley, Cirksena, and Butler, 1979) postings for five broad groups--migrant populations, rural populations, women, the disabled, and racial/ethnic minorities--were examined for the entire data base, and more specifically in terms of eight broad topics--ability, learning, instruction, curriculum, counseling, attitudes, administration, and employment. Over 50 thousand postings to the five groups were found: about 15 thousand documents/articles each for women, the disabled, and racial/ethnic minorities; 7 thousand for rural populations, and a thousand

for migrant populations. The number of postings by topic across the five groups ranged from a low of 1,870 for administration to 5,666 for instruction, with a total of 35 thousand postings for the eight topics. Comparisons across groups revealed different proportions of postings by topics. For example, more than one-third of all ERIC postings for the disabled are accounted for by just the three topics of ability, learning, and instruction, while less than one-sixth of all postings for women involve these topics.

At the level of specific group-by-topic combinations, there were many posting counts that deviated markedly from their "expected frequencies," computed on the basis of proportions of topic and group postings for the total ERIC data base. For example, over three thousand articles/documents were found dealing with attitudes/women when only two thousand were expected. Conversely, only 256 articles/documents were found dealing with learning/rural when 570 would be expected. (See Appendix A for details of the study.)

In concluding their report, the authors noted that as the preeminent data base in education, ERIC deserved further attention. They noted that longitudinal trends would create a valuable third dimension, in addition to groups and topics, and that analysis of types of documents/articles would indicate needed gap-filling. The possibility that the literature pertaining to some groups may have less depth and breadth, document for document, than literature pertaining to other groups also needed exploration, as did the analysis of data bases beyond ERIC.

III. DESIGN AND CONDUCT OF THE FOLLOW-UP STUDY

A. Selection of Categories and Sampling Method

This follow-up study proceeds directly from the above recommendations (with the exception that the focus remains solely on ERIC). For this next step, it is necessary to go beyond posting counts to retrieve, code, and statistically analyze the content of ERIC citation/abstracts in terms of various characteristics (e.g., date of publication, number of pages, sponsorship, type of document). Since the information available in Research in Education (RIE) regarding ERIC documents consistently includes citations and abstracts for each document, while that from the Current Index to Journals in Education (CIJE) contains only citations in the earlier accessions but includes short abstracts of journal articles in later accessions, the RIE entries provided substantially more information that can be content analyzed than do the CIJE entries. Hence, separate studies of RIE and CIJE were planned, but with a deliberate attempt to maintain as many comparable elements as possible.

Because 35,000 postings were found in the previous study, with individual topic/equity group cell counts ranging from 46 to 3,207 items (see Appendix A, Table A1), some method of sampling would be needed in order to reduce the amount of work and still make useful comparisons and estimates. To reduce the volume of work, it was also decided to examine only four of the eight topics, but to retain four or five groups. Examination of the discrepancies between actual and expected frequencies for the eight topics considered in the original study revealed that there were significantly higher tendencies for the topics of "attitudes," "employment," and "counseling" to be associated with specific populations, while the literatures dealing with "learning," "instruction," "curriculum," and "administration" were significantly less often associated with special groups (see Appendix A). "Ability" was the only topic where actual frequencies and expected frequencies were not significantly discrepant. We decided to retain all three of the "overexpectation" topics: "attitudes," "employment," and "counseling." Among the five other topics, we selected "curriculum," primarily because its underrepresentation roughly balanced the average overrepresentation of the other three selected topics, but also because we expected this topical area to provide some sense of what teachers or students could lay their hands on in terms of learning resources.

Regarding the three "overexpectation" topics, we note in passing that the emergence of a distinct literature on attitudes of or toward a particular group is often one of the early indicators of the emergence of interest in that group. This is often followed by more specific concerns with counseling and employment. The ERIC employment literature, in particular, often reflects a broader area of social concern that involves many non-educational sponsors and performers.

Initially, we decided to look at the literature on these four topics for at least four special groups. After examining the ERIC descriptor

terms that had been used in the earlier study, we concluded that several of the groups were too heterogeneous. This seemed especially true of the "minorities" group that included 15 terms that combined Blacks, Mexican Americans, Eskimos, Japanese, Filipino Americans, and others in one group. Because of their large percentage in U.S. school populations, and especially in the FWL region, we decided to look at two minority groups: Blacks and Hispanics (Mexican Americans and Puerto Ricans).

The "disabled" cluster was also a heterogeneous grouping of 17 terms representing many different disabilities (e.g., deaf, blind, speech handicapped, retarded children). Because disabilities pose special problems of considerable current interest for educators, we decided to focus on a pair of specific disability groups--the physically handicapped and the mentally handicapped/retarded.

These choices provided two "pairs," one contrasting two minority groups, and one contrasting two disability groups. Finally, because they represent half the population (and are of interest to several equity projects at FWL), we decided to also include women as a fifth group. After examining the 13 terms used in the original study, we decided to reduce this set to the ten most generic terms (e.g., working women, mothers, females).[1]

The listing of the ERIC search terms for the four topical areas and the five special populations can be found in Appendix A.

B. Sampling

As in the case of the previous study, another multi-hour search of the ERIC data base using the DIALOG system was made (in May 1980). But in this search we went beyond counts to obtain complete listings of all ED (RIE) and EJ (CIJE) document numbers for each of the 20 cells (four content topics by five special groups) of the study design. Each ED and each EJ listing for each cell was then systematically sampled to select exactly 25 items per listing.[2] The selected ED item citations and abstracts were line printed, one to a page, directly from the Lockheed ERIC file. The selected EJ entries were located and copied manually from CIJE volumes, and then mounted one to a page.

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[1]These choices meant that we dropped the "migrant" and "rural" groups from this exploratory analysis. Because both of these groups are of considerable interest, this was a hard choice that was reluctantly made in order to keep the present study of managable size and within budget. We intend to examine the literature on both of these groups, as well as other populations represented within the "minorities" and "disabled" categories in later studies.

[2]Only eight EJ articles indexed by both curriculum and physically handicapped terms were found. All eight were included in the sample.

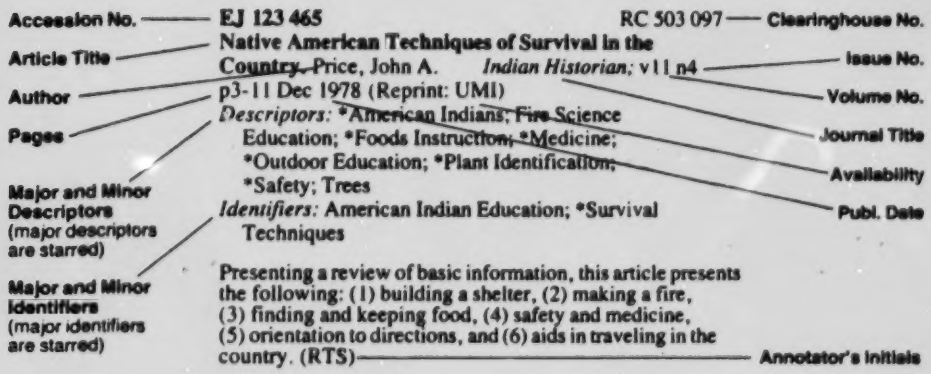
We note that there were two reasons for electing to use systematic sampling in preference to other sampling methods. First, this is the simplest way to sample the ED and EJ accession number listings. It is easily done manually, and on DIALOG it is possible to do it automatically through computer search codes. Of greater importance was the desire to look at the longitudinal trends in accessions that Paisley, et al. had suggested would create a valuable third dimension. Systematic sampling results in equal numbers of items appearing in each accession segment. Because, accession numbers are highly correlated with date of publication, obtaining equal numbers of documents throughout several accession segments provides more powerful tests of time/trend differences and more reliable estimates of trend parameters than could be obtained by simple random sampling.[3] As we shall see, the hunch that there would be longitudinal trends was amply confirmed. Sponsorship, type of performer, type of publication, degree of accessibility, author sex, and many other characteristics of ERIC data base have changed significantly over time. These differences would have been found by a simple random sampling, but they are more powerfully tested when there are equal or nearly equal numbers of documents in each accession-time segment.

C. CIJE Analysis

Figure 1 presents a sample CIJE main entry with annotation. As previously noted, short abstracts appear only in later CIJE entries.

FIGURE 1

SAMPLE CIJE MAIN ENTRY


Accession No.
EJ 123 465
RC 503 097
Clearinghouse No.
Article Title
Native American Techniques of Survival in the Country. Price, John A. Indian Historian; v11 n4
Issue No.
Author
Volume No.
Pages
p3-11 Dec 1978 (Reprint: UMI)
Journal Title
Descriptors: *American Indians; Fire Science Education; *Foods Instruction; *Medicine; *Outdoor Education; *Plant Identification; *Safety; Trees
Availability
Publ. Date
Major and Minor Descriptors (major descriptors are starred)
Identifiers: American Indian Education; *Survival Techniques
Major and Minor Identifiers (major identifiers are starred)
Presenting a review of basic information, this article presents the following: (1) building a shelter, (2) making a fire, (3) finding and keeping food, (4) safety and medicine, (5) orientation to directions, and (6) aids in traveling in the country. (RTS)
Annotator's Initials

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[3] A technically attractive alternative to systematic sampling of lists ordered by accession number would be to form several strata from the ordered accession lists, and randomly sample within each stratum. This approach, although more mechanically difficult, would produce somewhat less biased statistical estimates of means, variances, etc., but would require a prior decision on the number of strata to use.

Each CIJE main entry was coded by the following elements:

1. Topic descriptor (Attitudes, Counseling, Curriculum, Employment).

2. Equity group descriptor (Physically Handicapped, Mentally Handicapped, Blacks, Hispanics, Women).

3. Accession order (numbered 1-25 in reverse order from most recent to earliest accession number).

4. Clearinghouse (two leading letters in clearinghouse number.

5. Year of publication (publication date).

6. Pages.

7. Journal title.

Recalling that topic and equity group descriptors were used in the search that formed each topic/group cell, further efforts to analyze CIJE entries by other descriptors or identifiers were not made.[4]

The topic and group codes, together with the accession order number, uniquely identify each item in the sample. Means and variances for year of publication and for number of pages were computed within cells, and across topics and groups. Clearinghouse codes were tallied within cells and summed across topics and groups. Journal titles were also tallied within cells and summed across topics and groups. The journal titles were used to estimate two characteristics: a) the concentration of the sample literature (e.g., how many and which journals tend to cover the literature in the sampled areas); and b) journal circulation (i.e., roughly how many copies of the articles in the sample were circulated--how wide is the potential readership/access approximately for the articles in the samples). Circulation figures for the 200 plus journals represented in the samples were sought from several sources. First, by examination of circulation data published in Ulrich's International Periodicals Directory (1979), then by examination of other sources, including Camp and Schwark's Guide to Periodicals in Education and Academic Disciplines (1975), Ayer Directory of Newspapers, Magazines, & Trade Publications (1978), and examination of circulation statements contained in issues of journals located in the FWL library, at San Mateo Education Resource Center, and at several ERIC Clearinghouses (see Acknowledgements).

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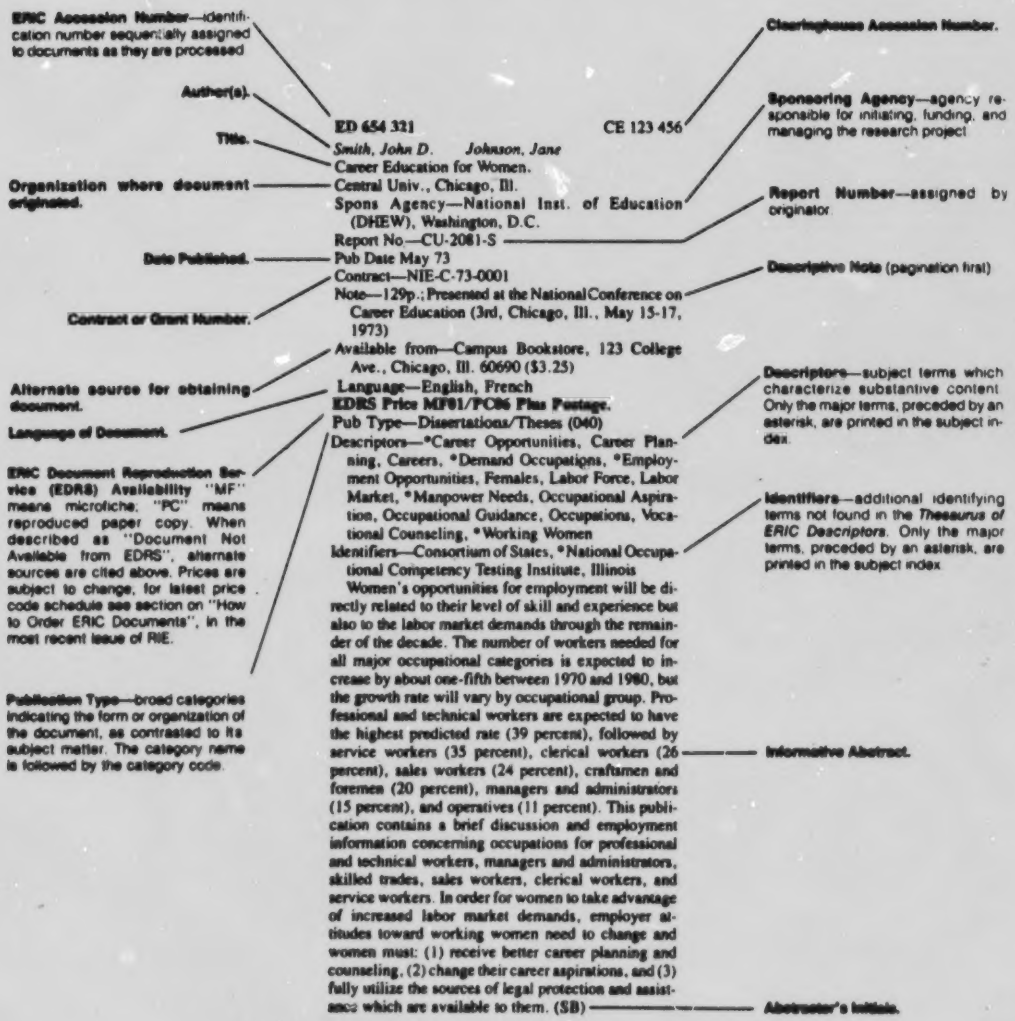
[4]With cell samples of 25, cross classification along any third descriptor classification dimension results in very low cross classification cell counts and very many zero counts, even if very large descriptor categories are used. Moreover, combining thousands of ERIC descriptor terms into a manageable number of classes is difficult logically and gargantuan technically.

D. RIE Analysis

While CIJE focuses exclusively on journals in education, RIE includes references to a much more diversified literature including: books, curriculum materials, instructional guides, project descriptions and evaluations, bibliographies and other reference materials, research reports, speeches and conference proceedings, theses, journal articles, and a number of other publication categories. Because of the diversity of these RIE entries, and due to the presence of suitable citation/abstract information, a more detailed analysis of the ED citations/abstracts was undertaken. Figure 2 presents a sample RIE entry.

FIGURE 2

SAMPLE RESUME ENTRY


ERIC Accession Number—identification number sequentially assigned to documents as they are processed
Author(s).
Title.
Organization where document originated.
Date Published.
Contract or Grant Number.
Alternate source for obtaining document.
Language of Document.
ERIC Document Reproduction Service (EDRS) Availability "MF" means microfiche; "PC" means reproduced paper copy. When described as "Document Not Available from EDRS", alternate sources are cited above. Prices are subject to change, for latest price code schedule see section on "How to Order ERIC Documents", in the most recent issue of RIE.
Publication Type—broad categories indicating the form or organization of the document, as contrasted to its subject matter. The category name is followed by the category code.
ED 654 321
CE 123 456
Smith, John D. Johnson, Jane
Career Education for Women.
Central Univ., Chicago, Ill.
Spons Agency—National Inst. of Education (DHEW), Washington, D.C.
Report No—CU-2081-S
Pub Date May 73
Contract—NIE-C-73-0001
Note—129p.; Presented at the National Conference on Career Education (3rd, Chicago, Ill., May 15-17, 1973)
Available from—Campus Bookstore, 123 College Ave., Chicago, Ill. 60690 ($3.25)
Language—English, French
EDRS Price MF01/PC06 Plus Postage.
Pub Type—Dissertations/Theses (040)
Descriptors—*Career Opportunities, Career Planning, Careers, *Demand Occupations, *Employment Opportunities, Females, Labor Force, Labor Market, *Manpower Needs, Occupational Aspiration, Occupational Guidance, Occupations, Vocational Counseling, *Working Women
Identifiers—Consortium of States, *National Occupational Competency Testing Institute, Illinois
Women's opportunities for employment will be directly related to their level of skill and experience but also to the labor market demands through the remainder of the decade. The number of workers needed for all major occupational categories is expected to increase by about one-fifth between 1970 and 1980, but the growth rate will vary by occupational group. Professional and technical workers are expected to have the highest predicted rate (39 percent), followed by service workers (35 percent), clerical workers (26 percent), sales workers (24 percent), craftsmen and foremen (20 percent), managers and administrators (15 percent), and operatives (11 percent). This publication contains a brief discussion and employment information concerning occupations for professional and technical workers, managers and administrators, skilled trades, sales workers, clerical workers, and service workers. In order for women to take advantage of increased labor market demands, employer attitudes toward working women need to change and women must: (1) receive better career planning and counseling, (2) change their career aspirations, and (3) fully utilize the sources of legal protection and assistance which are available to them. (SB)
Clearinghouse Accession Number.
Sponsoring Agency—agency responsible for initiating, funding, and managing the research project
Report Number—assigned by originator
Descriptive Note (pagination first)
Descriptors—subject terms which characterize substantive content. Only the major terms, preceded by an asterisk, are printed in the subject index.
Identifiers—additional identifying terms not found in the Thesaurus of ERIC Descriptors. Only the major terms, preceded by an asterisk, are printed in the subject index.
Informative Abstract.
Abstractor's Initials.

The analysis of RIE main entries considered the following elements:

1. Topic descriptors (Attitudes, Counseling, Curriculum, Employment).

2. Equity group descriptors (Physically Handicapped, Mentally Handicapped, Blacks, Hispanics, Women).

3. Accession order (numbered 1-25 in reverse order from most recent to earliest accession number).

4. Clearinghouse code.

5. Year of publication.

6. Pages.

7. Publication type (12 publication codes: books, curriculum materials, directories, guides, journal articles and serials, program/project descriptions and evaluations, bibliographies, proceedings, questionnaires, research reports, speeches, theses).

8. Sponsor type (7 codes: federal, foundation, state/local education agency, other state agency, publisher, other sponsors, no sponsor indicated).

9. Performer agency type (typed on the basis of institutional affiliation of first author, 10 codes: university or college, federal agency, state agency, local agency, non-profit/for-profit, council/commission, association, foundation, publisher, no information that permits classification).

10. State location (typed according to institutional location of first author: U.S. states and territories, DC, Canada, other non-U.S.).

11. Microfiche availability (1 if available from ERIC, NTIS, etc.; 0 otherwise).

12. Paper (hard) copy availability (1 if available from ERIC, NTIS, etc.; 0 otherwise).

13. Sex of authors (for first author: male, female, agency anonymous. Also coded by sex combinations of first, second, and other authors).

14. Number of equity groups identified.

The first six of the above elements are identical to the coding used in the CIJE analysis. Publication type codes have been applied to ED accessions since mid 1977, but have been published in RIE only since mid 1979. Sample entries were classified by the author using the coding categories listed in Appendix A. Sponsor type and performer

agency type were also coded by the author using the coding categories listed in Appendix A. Coding of state location was simple for most entries, with the major exception of speeches ("Papers presented at...") which are identified by the location of the meeting, convention, etc. In these instances, microfiche or hard copy of the document was retrieved to identify the first author's type of institution and its state location. Microfiche (MF) and hardcopy (HC) availability are included in each RIE entry. Sex of author(s) could usually be determined from author(s) names. In cases where initials were used, microfiche or hard copy of the document was examined, and in cases where initials were again used, various biographical directories were consulted. Since many documents, especially those produced by state and local agencies, are published anonymously, a special "agency anonymous" code was entered for these documents. When preliminary perusal of the sample entries suggested that some documents dealt exclusively with one group while others were indexed with descriptors for several groups, we decided to code each entry according to the number of equity groups identified. More than the five equity groups used in the search were considered (e.g., American Indians, Japanese, Appalachian white, rural, low socio-economic, see Appendix A). Major and minor descriptors, major and minor identifiers, the title and the abstract were scanned to classify each item into one of three categories: 1) only one equity group identified; 2) two or three groups identified; 3) more than three groups identified.

RIE coded data were punched on IBM cards, verified, and sorted by content topic/group combinations. One-way and two-way tabulations were made for all qualitative codes (including the semi-decade of publication). Quantitative data, on year of publication, number of pages, and journal circulation, were examined by two-way (topic by group) and three-way (topic by group by accession block) analysis of variance.[5]

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[5]To deal with occasionally missing data, the unweighted mean analysis method (Weiner, 1971, pp. 445-449) was employed. This method proceeds on the basis that loss of observations in cells is essentially random and there are no grounds for permitting unequal frequencies to influence the estimation of population means.

IV. STUDY RESULTS

A. Introduction

The description of results is organized as follows. First, CIJE journal postings and then RIE document postings for the entire ERIC data base and, specifically, for the 20 combinations of topics/groups, will first be examined to gain some idea of the total number of articles and documents that are available. A third section will summarize these results in terms of total ERIC coverage. A fourth section will examine the results of the content analysis of the sample of CIJE articles. The final two sections will examine the results of the content analysis of the sample of RIE documents.

B. CIJE Journal Coverage

Table 1 presents the CIJE postings for journal articles. The table can be read as follows:

1. The labels that appear on the left and top margins of the tables are composites representing clusters of search terms. For example, as described in Appendix A, the label "attitudes" represents seven terms carefully chosen by Paisley, et al. from the ERIC Thesaurus: attitudes, administrator attitudes, student attitudes, teacher attitude, counselor attitudes, school attitudes, community attitudes. These seven terms are posted to a total of 18,969 journal articles in the ERIC data base. This is a non-redundant total since journal articles associated with more than one of the seven terms are counted only once.[6] The percentages in brackets in the left margin indicate what portion of the total number of CIJE accessions at the time of the search were posted to each topic. For example, the 18,969 attitude postings represent nine percent of the 211,942 articles then in CIJE. Similarly, the postings in the top margin indicate number of postings in CIJE for each group, and the percentage that this number is to total CIJE accessions. For example, the 704 articles dealing with physically handicapped constitute only one-third of one percent of the CIJE literature, while about four percent of all CIJE articles are indexed by one or more of the ten terms for women. The 8,565 postings for women exceed the combined total of postings for the other four groups. After women, order of posting counts are: for mentally handicapped (3,539), Blacks (2,950), Hispanics (997), and then physically handicapped (704). The journal literature for the handicapped, and for the minority/ethnic groups are thus each about half as large as the women's literature.

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[6]Note that totals over the four topics or over the five groups may be redundant since the same article may deal with more than one of the four topics or more than one of the five groups.

TABLE 1

ERIC JOURNAL ARTICLE (CIJE) COVERAGE OF FOUR TOPICS
WITH REFERENCE TO FIVE GROUPS

CIJE Postings	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Totals for 5 Groups
	1 term	2 terms	6 terms	2 terms	10 terms	
P=211,942	P=704 (0.33%)	P=3,539 (1.67%)	P=2,950 (1.39%)	P=997 (0.47%)	P=8,656 (4.08%)	P=16,846 (7.95%)
ATTITUDES	(0.6%)	(1.4%)	(3.6%)	(0.8%)	(9.1%)	(15.4%)
7 terms	107	263	680	151	1,719	2,920
P=18,969 [9.0%]	[15.2%]	[7.4%]	[23.1%]	[15.1%]	[25.1%]	[17.3%]
EMPLOYMENT	(1.1%)	(1.5%)	(2.9%)	(0.6%)	(11.1%)	(17.1%)
8 terms	67	92	177	37	684	1,057
P=6,172 [2.9%]	[9.5%]	[2.6%]	[6.0%]	[3.7%]	[10.0%]	[6.3%]
COUNSELING	(1.4%)	(1.0%)	(1.8%)	(0.4%)	(5.9%)	(10.5%)
11 terms	126	90	168	34	544	962
P=9,144 [4.3%]	[17.9%]	[2.5%]	[5.7%]	[3.4%]	[7.9%]	[5.7%]
CURRICULUM	(.05%)	(0.5%)	(0.6%)	(0.2%)	(1.2%)	(2.5%)
5 terms	8	80	89	31	195	403
P=15,842 [7.5%]	[1.1%]	[2.3%]	[3.0%]	[3.1%]	[2.8%]	[2.4%]
Total Over 4 Topics	(0.6%)	(1.0%)	(2.2%)	(0.5%)	(6.3%)	(10.7%)
50,127	308	525	1,114	253	3,142	5,342
[23.7%]	[43.7%]	[14.8%]	[37.8%]	[25.4%]	[36.3%]	[31.7%]

2. The cell in the left-upper corner, found at the intersection of "attitudes" and "physically handicapped," shows the number of journal articles associated both with "attitude" terms (postings P=18,969) and with the one physically handicapped term (P=704). The 107 articles found at this intersection are [15.2%] of the 704 articles dealing with physically handicapped; but they are only (0.6%) of the 18,969 articles dealing with attitudes. Note that percentages appearing in brackets throughout Table 1 have been computed by dividing the posting frequency in that cell by the posting appearing in the top margin. Thus, all percentages in brackets [%] refer to the total postings for that group (or the sum of the five groups on the right, or all of CIJE on the left). All percentages appearing in parentheses have been computed by dividing the posting frequency in that cell by the postings appearing in the left margin. The percentages in parentheses (%) thus refer to the total postings for each topic (or sum of topics or all of CIJE). Hence, percentages in brackets [%] should be compared across columns in one row to examine for differences among groups in terms of how much of their total journal literature is posted to a particular topic. Correspondingly, percentages in parentheses (%) should be compared down rows in one column to examine for differences in how much of the total journal literature on each of the four topics is posted to a particular group. For example, with respect to "attitudes," we note that [25.1%] of all women's journal literature but only [7.4%] of all mentally handicapped literature deals with attitudes. With respect to "women," (9.1%) of all attitude journal literature and (11.1%) of all employment journal literature is indexed with women's terms but only (1.2%) of the curriculum is indexed to women's terms.

3. The right margin shows the total of postings across the five groups for each topic. In the case of attitudes, the five cell frequencies of 107, 263, 680, 151, and 1,719 sum to 2,920, which is (15.4%) of the 18,969 "attitude" postings. Because there may be some redundant postings (e.g., the same article on attitudes might deal with Black women and thus be posted to the Black group and to the women group), the percentages at the top of each row in the right margin should be interpreted as indicating that this percentage or less of all journal articles posted for the topic pertain to the combination of these five special groups. The percentage in brackets at the bottom of each right marginal row show what portion this sum is when compared to the sum of all postings for the five groups. For example, the 2,920 postings for "attitudes" represent [17.3%] of the 16,846 sum of postings for all five groups.

4. The bottom margin is interpreted in a manner analogous to the right margin. It shows the sum over the four topic areas for each group. What is perhaps remarkable here is that perhaps as much as 40 percent of all the journals posted to the physically handicapped, perhaps a third of the articles posted to Blacks or to women, and a fourth of the articles posted to Hispanics are concerned with these four topics.[7] By contrast, less than 15 percent of the articles on the mentally retarded are posted to any of these four topics.

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[7]Again there may be some redundancy for these totals over topics. However, it is less likely that an article would be posted to two or more of these four topics than it is that an article would be posted to two or more groups.

5. Comparison of the percentages in brackets across columns in each topic row confirm the basis for selecting these four topics. With four exceptions (mentally handicapped/attitudes, mentally handicapped/employment, mentally handicapped/counseling, and Hispanic/counseling), the percentages for all special groups are in the expected direction; that is, percentages of the literature posted to attitudes (4 of 5 groups), employment (4 of 5 groups), and counseling (3 of 5 groups) are higher than the percentage for these topics in all CIJE literature [left margin %], while the percentages of curriculum literature for all five special groups are much smaller (approximately one-third) than the percentage of curriculum topics in the total CIJE literature. This dearth of curriculum articles is most pronounced in the case of the physically handicapped where only eight articles were found, representing 0.05 percent of the CIJE curriculum literature and 1.1 percent of all physically handicapped postings in CIJE. Conversely, the women's group exhibits the highest levels of "over-representation." Here one-fourth (as compared to 9% of all CIJE articles) deal with attitudes, 10 percent (compared to 2.9%) deal with employment and almost 8 percent (compared to 4.3%) deal with counseling. Thus, perhaps as much as 43 percent of the articles on women deal with these three topics, while only about 16 percent of all CIJE articles are posted to these topics.

We have already noted that, with the partial exception of the physically handicapped, nearly all of the cell frequencies in Table 1 are significantly higher (for attitudes, employment, and counseling) or significantly lower (for curriculum) than would be expected given the proportions of postings of these four topics for all CIJE articles. It is also true that the five special groups display different distributions by topics when compared to one another.

For this comparison we must compute expectations based on the totals in the right and bottom margins.[8] Note that expected frequencies here are computed on the basis of the right and bottom marginal totals over the five groups and over the four topics, not from the left and top marginal totals used previously to compare group/topic postings to the proportion of all items in the CIJE data base posted to the topic and group.

Table 2 presents an internal comparison based on proportions of the 5,342 postings summed over the five groups and four topics (rather than on proportions by topic and group of the 211,942 total of all CIJE postings previously considered). Each cell displays the actual (A) and the expected (E) frequency of postings for the cell. Adjusted residuals (AR) are also displayed. Negatively signed residuals indicate

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[8]A chi square test for independence between topic and group classifications is highly significant, indicating that the cell frequencies are not at all well fitted by the (right and bottom) marginal frequencies in Table 1. However, with 5,342 postings this is a trivial result. Finding a significant chi square, we proceeded to examine the adjusted residuals (see Appendix B) for each cell to determine where the independence model breaks down. The cells in Table 2 exhibiting significant adjusted residuals are marked with asterisks.

TABLE 2

INTERNAL COMPARISON OF ACTUAL (A) AND EXPECTED (E) POSTINGS IN CIJE FOR FOUR TOPICS WITH REFERENCE TO FIVE GROUPS, WITH ADJUSTED RESIDUALS (AR) FOR CELLS

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	TOTAL OVER GROUPS
ATTITUDES (A)	107	263	680	151	1719	2920
(E)	168	287	609	138	1717	
	***	**	***	-	-	
(AR)	-7.2	-2.2	+4.8	+1.8	+0.0	
EMPLOYMENT (A)	67	92	177	37	684	1057
(E)	61	104	220	50	622	
	-	-	***	**	***	
(AR)	+1.0	-1.4	-3.7	-2.2	+4.4	
COUNSELING (A)	126	90	168	34	544	962
(E)	55	95	201	46	566	
	***	-	**	-	-	
(AR)	+10.7	-0.6	-2.8	-1.9	-1.6	
CURRICULUM (A)	8	80	89	31	195	403
(E)	23	40	84	19	237	
	***	***	-	**	***	
(AR)	-3.4	+7.0	+0.6	+2.7	-4.3	
TOTAL OVER TOPICS	308	525	1114	253	3142	5342

that the expected frequency is greater, positively signed residuals indicate the actual frequency is greater. Adjusted residuals over 2.0 (probability is less than .05) are marked by two asterisks. Adjusted residuals over 3.3 (probability is less than .001) are marked with three asterisks. Twelve of the 20 cells display statistically significant discrepancies between actual and expected journal postings.

The attitude literature is marked by three significant discrepancies. The articles for physically and mentally handicapped are both substantially less than the number that would be expected, while the articles for Blacks are significantly more than the number expected.

For employment literature the major discrepancies involve an underrepresentation of articles for Blacks and Hispanics and an overrepresentation for women.

As previously noted in Table 1, although the 126 counseling articles dealing with the physically handicapped represent only 1.4 percent of all counseling journal literature, they represent 17.9 percent of all the journal literature posted to this group. When compared to the other groups this is far higher than expected (126 vs. 55). On the other hand, the counseling literature for Blacks is less than would be expected (168 vs. 201).

We have previously noted that the journal literature dealing with curriculum tends to be significantly underrepresented for all groups when compared to the total number of curriculum articles in CIJE. When we make an internal comparison, four of the five groups exhibit marked discrepancies. The mentally handicapped and the Hispanics have many more curriculum journals (80 vs. 40, 31 vs. 19, respectively) and the physically handicapped and women have markedly fewer journals (8 vs. 23, 195 vs. 237, respectively) than would be expected given the total of only 403 curriculum postings over the five groups. In this instance, Blacks are the only group with actual postings (89) near expected postings (84).

Reviewed by group, we note that every group has one or more topic postings that are discrepant. For the physically handicapped there are three discrepancies: both attitude and curriculum postings are less than would be expected while conseling is remarkably over expectation. Blacks also have three discrepancies with employment and counseling literature under, and attitude literature over expectation. The remaining groups each have two significant discrepancies. For women, employment literature is more than would be expected while their curriculum literature is less. Mentally handicapped and Hispanics are both over expectation in curriculum; mentally handicapped are under expectation on attitudes, while the Hispanics are under expectation on employment.

We [illegible]s see, that whether we compare topic/group cell postings to the ex[illegible]nal references of all CIJE postings, or to the internal reference of the sample marginal totals, there are marked differences among the groups and among topics that preclude simple generalizations about the topical patterns of journals for these groups.

TABLE 3

ERIC DOCUMENT (RIE) COVERAGE OF FOUR TOPICS
WITH REFERENCE TO FIVE GROUPS

Total RIE Postings	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Totals for 5 Groups
	1 term	2 terms	6 terms	2 terms	10 terms	
P=178,674	P=782 (0.4%)	P=2,381 (1.3%)	P=3,877 (2.2%)	P=2,606 (1.5%)	P=7,917 (4.4%)	P=17,563 (9.8%)
ATTITUDES	(0.4%)	(1.1%)	(5.4%)	(2.6%)	(10.1%)	(19.7%)
7 terms	70	201	981	477	1,832	3,561
P=18,051 [10.1%]	[9.0%]	[8.4%]	[25.3%]	[18.3%]	[23.1%]	[20.3%]
EMPLOYMENT	(0.7%)	(1.3%)	(4.4%)	(1.9%)	(11.2%)	(19.6%)
8 terms	80	136	478	208	1,213	2,115
P=10,791 [6.0%]	[10.2%]	[5.7%]	[12.3%]	[8.0%]	[15.3%]	[12.0%]
COUNSELING	(1.1%)	(1.4%)	(2.0%)	(1.2%)	(6.9%)	(12.5%)
11 terms	94	120	175	104	612	1,105
P=8,842 [4.9%]	[12.0%]	[5.0%]	[4.5%]	[4.0%]	[7.7%]	[6.3%]
CURRICULUM	(0.2%)	(1.4%)	(0.8%)	(1.3%)	(1.5%)	(5.3%)
5 terms	48	350	205	315	375	1,293
P=24,462 [13.7%]	[6.1%]	[14.7%]	[5.3%]	[12.1%]	[4.7%]	[7.4%]
Total Over Topics	(0.5%)	(1.3%)	(3.0%)	(1.8%)	(6.5%)	(13.0%)
62,146	292	807	1,839	1,104	4,032	8,074
[34.8%]	[37.3%]	[33.9%]	[47.4%]	[42.4%]	[50.9%]	[46.0%]

C. RIE Document Coverage

Table 3 presents the data for documents indexed in Research in Education (RIE). This table is read in the same way as Table 1. Although the postings to RIE (P=178,674) are substantially fewer than those to CIJE (P=211,942), we note that there are substantially more documents in RIE than in CIJE concerned with employment (10,791 in RIE vs. 6,172 in CIJE) and with curriculum (24,462 vs. 15,842). Moreover, the number of postings in RIE to the special groups is larger (17,563 in RIE vs. 16,846 in CIJE). The differences are most marked for Hispanics (2,606 documents, representing 1.5% of all RIE documents, vs. 997 articles, representing 0.5% of all CIJE articles), and Blacks (3,877 vs. 2,950), but there is a markedly smaller literature for mentally handicapped (2,381 in RIE vs. 3,539 in CIJE).

We again find, with again the exception of the mentally handicapped, a tendency for attitude and employment topics to be overrepresented (approximately 20 percent vs. 10 percent for attitude topics, and 12 percent vs. 6 percent for employment topics). Counseling topics are also over expectation, but only for the physically handicapped and for women. Conversely, curriculum topics tend to be underrepresented for every group but the mentally handicapped.

While the total of postings summed over four topics and five groups is 5,342 for CIJE, representing 32 percent of the sum of group postings, the sum is 8,074 for RIE, representing 46 percent of the sum of group postings. We thus see that: 1) RIE exhibits a different pattern of postings to topics, with substantially higher absolute numbers and percentages of postings to curriculum and employment topics; 2) RIE exhibits a differnt pattern of postings to groups, with markedly higher numbers (and percentages) of postings for Hispanics and Blacks; similar amounts for women and physically handicapped, but fewer postings for mentally handicapped; 3) despite these differences, there is still the tendency in RIE and CIJE for the same topics to be overrepresented (attitudes, employment, counseling) or underrepresented (curriculum).

We also find an (even more marked) pattern of internal differences when the postings for the five groups are compared to one another. Table 4 displays the actual and expected frequencies (based on the right and bottom marginal totals in Table 3) and the adjusted residuals. It is read the same way as Table 2. In Table 4, 15 of the 20 topic/group cells display significant discrepancies between actual and expected postings. All four cells for women indicate discrepancies, with postings for attitude, employment, and counseling topics all greater than expected, while curriculum postings are fewer than expected. Blacks also exhibit this pattern partially, with markedly greater postings for attitudes and markedly fewer than expected postings for curriculum. However, Blacks have fewer counseling documents than expected. The remaining three groups each display a somewhat different pattern, in both the direction and magnitudes of discrepancies. Physically handicapped are underexpectation in attitudes and over in counseling. Mentally handicapped are also under in attitudes, but also under in employment and very markedly over in

TABLE 4

INTERNAL COMPARISON OF ACTUAL (A) AND EXPECTED (E) POSTINGS IN RIE FOR FOUR TOPICS WITH REFERENCE TO FIVE GROUPS, WITH ADJUSTED RESIDUALS (AR) FOR CELLS

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total Over Groups
ATTITUDES (A)	70	201	981	477	1832	3561
(E)	129	356	811	487	1778	
	***	***	***	-	**	
(AR)	-7.0	-11.6	+9.1	-0.7	+2.5	
EMPLOYMENT (A)	80	136	478	208	1213	2115
(E)	76	211	482	289	1056	
	-	***	-	***	***	
(AR)	+0.5	-6.3	-0.2	-6.0	+7.9	
COUNSELING (A)	94	120	175	104	612	1105
(E)	40	110	252	151	552	
	***	-	***	***	***	
(AR)	+9.4	+1.0	-5.9	-4.5	+3.9	
CURRICULUM (A)	48	350	205	315	375	1293
(E)	47	129	295	177	646	
	-	***	***	***	***	
(AR)	+0.2	+22.3	-6.6	+12.3	-16.4	
Total Over Topics	292	807	1839	1104	4032	8074

curriculum. Hispanics also display a pattern of being under in employment and over in curriculum, but they are also under in the counseling area. Hence, the groups are different from one another both in their CIJE journal postings and in the RIE document postings.

However, there is some similarity in the discrepancy patterns found in Tables 2 and 4. To facilitate this comparison the adjusted residuals from Tables 2 and 4 are reproduced in Table 5.

TABLE 5

COMPARISON OF ADJUSTED RESIDUALS FOR CIJE AND FOR RIE
BASED ON TABLES 2 and 4

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN
ATTITUDES (CIJE)	-7.2 ***	-2.2 **	+4.8 ***	+1.8	+0.0
(RIE)	-7.0 ***	-11.6 ***	+9.1 ***	-0.7	+2.5 **
	S	S	S	-	D
EMPLOYMENT (CIJE)	+1.0	-1.4	-3.7 ***	-2.2 **	+4.4 ***
(RIE)	+0.5	-6.3 ***	-0.2	-6.0 ***	+7.9 ***
	-	D	D	S	S
COUNSELING (CIJE)	+10.7 ***	-0.6	-2.8 **	-1.9	-1.6
(RIE)	+9.4 ***	+1.0	-5.9 ***	-4.5 ***	+3.9 ***
	S	-	S	D	D
CURRICULUM (CIJE)	-3.4 ***	+7.0 ***	+0.6	+2.7 **	-4.3 ***
(RIE)	+0.2	+22.3 ***	-6.6 ***	+12.3 ***	-16.4 ***
	D	S	D	S	S

We see in Table 5, that the adjusted residuals agree (S=same) both in significance and sign for ten of the twenty cells. In three more cells (-), there is agreement in the sense that although the signs may differ, there is no significant discrepancy indicated. In five of the remaining seven cells, where there are differences (D), the RIE adjusted residuals are significant while the CIJE residuals are not, while in only two cases (Blacks/employment and physically handicapped/curriculum) CIJE adjusted residuals are significant while RIE residuals are not. We thus see that there is some, but a far from perfect, similarity in the CIJE and RIE literature regarding the tendency for a topic to be significantly over or under expected frequencies in postings for a particular group, when expected frequencies are based on the total of topical postings over all five groups and over all four topics.

D. ERIC Data Base Coverage Summary

By the Spring of 1980, the ERIC data base exceeded three hundred and ninety thousand articles/documents. A total of over thirty-four thousand postings in the data base were made to the five equity groups considered in the study: women, 16,573 articles/documents; Blacks 6,827; Hispanics, 3,603; mentally handicapped, 5,920; and physically handicapped, 1,486. Four substantive topics were searched for each of these five groups. The topics of attitudes, employment, and counseling were selected because a previous study indicated that literature on these topics tended to be more frequently indexed to special groups. A fourth topic, curriculum, was selected as representative of topics which are less often indexed to special groups. Although there were several differences between the special groups searched in the preliminary study and the current study, this pattern of topical over- and under-posting for special groups was confirmed for both the CIJE article and the RIE document literature. For all ERIC literature (CIJE plus RIE), the percentage of the postings to the five groups is approximately twice as high for attitude topics (18.8% vs. 9.5%) and for employment topics (9.2% vs. 4.3%), and half as high for curriculum topics (4.9% vs. 10.3%) when compared to the percentage of postings to topics for all ERIC articles/documents. Although the difference in percentages (6.0% vs. 4.6%) is less for the counseling topic, it is in the predicted direction of higher percentage of postings for the special groups.

Although only four topics (of potentially hundreds of topics) were examined, it is evident that these four account for sizable proportions of the literature posted to the five groups, amounting to nearly a third of the sum of the postings for the five groups for CIJE articles and nearly half of the group postings for RIE documents.

There are remarkable differences between the CIJE and RIE literature in the amounts and proportions of the literature posted to topics and to groups. In numbers and in percentages, there are substantially more postings to curriculum and to employment topics in RIE than in CIJE. Thee are also remarkably higher numbers and percentages of postings to Hispanics and Blacks in RIE than in CIJE. However, the number of postings to mentally handicapped is significantly less in RIE than in CIJE.

Aside from the general tendency for most groups to receive more postings for attitude, employment, and occasionally counseling topics, and to receive fewer postings for curriculum topics, there are few similarities but many differences among the five groups. These differences are expecially marked when internal comparisons are made among individual postings for the twenty combinations of five groups and four topics. Chi square tests of independence (between groups and topics)were highly significant for both the CIJE and RIE postings, with 12 of the 20 cells in the CIJE analysis and 15 of the 20 cells in the RIE analysis displaying highly significant discrepancies between expected and actual numbers of postings. Although there are gross similarities between the CIJE and the RIE chi square analyses (thirteen of the twenty corresponding pairs of topic/group cells were either both insignificant or were both significant and with the same sign), there are no very striking patterns of similarity among groups or among topics in the actual/expected frequency discrepancy patterns for either CIJE or RIE. We are thus forced to conclude that generalizations from one to another equity group in terms of the amounts or proportions of CIJE or RIE postings to various topics, or from one topic to another topic in terms of proportions of postings to various groups can be made only very roughly, and with many errors.[9]

While considering the data on CIJE and RIE postings, it is important to review the major limitations to such data that were identified by Paisley, et al., namely:

1. No external criterion tells us how many documents/articles should pertain to a particular topic with reference to a particular group. Across time, sites, and the range of activities from research through practice, is the optimum number of documents/articles 50, 100, 500, 1,000 or 5,000? "The sky is not the limit," because each document or article represents a federal investment in information processing, not to mention the costs incurred by the original authors, and publishers or distributors.

2. Except by relying on statistical coverages, we cannot say that 50 documents/articles pertaining to one topic and group contain only 10% as much information as 500 documents/articles pertaining to another topic and group. In fact some discount should be applied to the information value of a large number of documents/articles pertaining to the same topic and group because content redundancy increases concomitantly.

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[9]Crude estimation is of course possible. For example, since the literature on women constitutes approximately half of all the postings to groups, one would always be correct in predicting that there would be more CIJE or RIE documents posted to any of the four topics for women than for any other group. Note, however, that although there are 3,877 RIE documents posted to Blacks, while Hispanics have far fewer (2,606), Hispanics have fifty percent more curriculum documents than Blacks (315 to 205).

> These caveats say that no cell [in Tables 1 & 3] indicates too little, too much, good, or bad information *per se*. However, internal comparisons [within tables] raise a number of questions about the concept of information equity.
>
> Paisley, et al. (1979, pp. 13-14)

Although we are not able to employ any external criterion to deal with questions of adequacy or relevance, in the next two sections we shall go subtantially beyond sheer counts of articles/documents to discover something about their content.

E. CIJE Content Analysis Results

While the previous three sections have considered counts for *populations* (the "universe" of CIJE and RIE accessions from the inception of ERIC in the 1960's through to early 1980), this and the next section focus on *samples* from those populations. As described in Section III B, twenty systematic samples of CIJE items were drawn, one for each topic/group combination.[10]. In this section we shall examine these CIJE samples in terms of the following characteristics: 1) publication date; 2) page length; 3) journal scatter, 4) journal circulation; and 5) clearinghouse distribution.

1. Publication date. The 483 journals represented in the twenty samples span eleven years, from 1969 to 1979. Examination of Table 6 indicates that there is a substantial difference in the average date of publication among the samples for groups, with the sample journal literature for women averaging fully a year more recent and that for the physically handicapped over a year more recent than the journal literature for the other three groups. The differences in average publication dates among topics (averaged over the five groups) are relatively small and not significant. However, the presence of a significant interaction term requires a closer examination of row and column differences. Focusing first on individual cell means, we note the following. The physically handicapped/attitudes articles average roughty a year older (19)74.20, while the curriculum articles average more than a year more recent, 76.38, than the overall average publication date for this group, 75.26.

While the curriculum articles for the physically handicapped are somewhat more recent, the curriculum articles for Blacks and for Hispanics are both more than a year older than the average for these groups.

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[10]Twenty-five items were drawn from each of 19 cells and all eight of the journal entries in the physically handicapped/curriculum cell were drawn, thus producing a total sample of 483 items from a population of 5,342 postings. The sample thus represents a nine percent sample of the population of CIJE postings for these five groups and these four topics. However, the individual cell sampling fractions range from 100 percent to less than two percent.

TABLE 6

UNWEIGHTED MEANS ANALYSIS OF VARIANCE:
PUBLICATION DATES FOR SAMPLES OF TWENTY TOPIC/GROUP COMBINATIONS*

Cell Means

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Average
ATTITUDES	74.20	73.48	73.92	74.32	74.72	74.13
EMPLOYMENT	74.96	74.12	74.52	73.88	74.92	74.48
COUNSELING	75.48	73.12	73.28	74.68	74.60	74.23
CURRICULUM	76.38	74.04	72.12	72.48	75.12	74.03
Average	75.26	73.69	73.46	73.84	74.84	74.22

Summary of Analysis of Variance

Source of Variation	SS	df.	MS	F	P level
Topics	12.656	3	4.219	0.46	NS
Groups	221.932	4	55.483	6.11	P<.01
Interaction	197.524	12	16.460	1.81	P<.05
Within Cell	4,202.595	463	9.077	-	-

*Note: N=25 for all cells except physically handicapped/curriculum where N=8. Harmonic mean of cell frequencies = 22.60. Cell means are averages for years of publication minus 1900.

Finally, the employment journal literature for Blacks is more recent than the average for Blacks. Note that these topic/group interaction differences tend to balance out over groups (physically handicapped and Blacks) and across the curriculum topic. Considering the overall range of eleven years from the earliest to the most recent journal articles in these twenty samples, the differences for publication dates among the curriculum samples are especially remarkable, ranging from (19)72.12 for Blacks and 72.48 for Hispanics to much more recent averages of (19)75.12 for women and 76.38 for physically handicapped.[11] The most marked differences among topics within groups are for the physically handicapped, Blacks and Hispanics; however only the difference in publication date averages among topics for Blacks is significant.[12]

To summarize, the dates of journal publication for the articles in these samples ranged from 1969 to 1979, with an overall average date of March 1974 (74.22). Averaged across the four topics, the journal literature for physically handicapped and for women on these topics averages more than a year more recent than the literature for the other three groups. While the size of these group differences are so large that they override a significant interaction effect, the interaction effect points to at least two significant simple effects: a) for differences among groups for the curriculum topics, and b) for differences among topics of the Black group. In the curriculum area, the journal literature for the physically handicapped and for women is much more recent than the journal literature for Blacks and Hispanics. Within the Black group, journal articles dealing with employment are the most recent, while curriculum articles are the oldest.

2. Page length. Table 7 presents the results for the average number of pages per journal for each topic/group combination. While this sample of 483 journals ranged from one to 56 pages in length, the overall average is just over seven pages. Although there is no interaction between topic and groups, the main effects for both topic and group are highly significant. Averaged over groups, the articles for counseling and for curriculum are substantially shorter per articles (6.05 pp. and 6.38 pp. respectively) than those for attitudes and employment (7.40 pp. and 8.27 pp. respectively). Averaged over topics, the average pages are markedly less for both handicapped groups than they are for Blacks, Hispanics and women. The additive effect of employment (topic) plus Blacks, Hispanics, or women (group) results in cell averages for these combinations that are especially large (8.84 pp., 10.56 pp., and 11.72 pp. respectively).

When these page averages are multiplied by the number of journals posted to each cell, we obtain an estimate of the total number of journal pages in CIJE that have been posted to each group/topic.

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[11]The F-test of the simple effect of groups for curriculum is F=7.94, which for 4 and 463 degrees of freedom is highly significant.

[12]The F-test for the simple effect of topics for Blacks is F=2.624, which for 3 and 463 degreees of freedom just reaches the P=.05 level.

TABLE 7

UNWEIGHTED MEANS ANALYSIS OF VARIANCE:
PAPER LENGTH FOR SAMPLES OF TWENTY TOPIC/GROUP COMBINATIONS*

Cell Means

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Average
ATTITUDES	6.08	5.16	7.96	10.68	7.12	7.40
EMPLOYMENT	5.68	4.56	8.84	10.56	11.72	8.27
COUNSELING	5.72	5.40	5.40	6.24	7.48	6.05
CURRICULUM	4.50	5.80	7.52	5.84	8.24	6.38
Total	5.50	5.23	7.43	8.33	8.64	7.02

Summary of Analysis of Variance

Source of Variation	SS	df.	MS	F	P level
Topics	346.48	3	115.49	3.86	P<.01
Groups	907.45	4	226.86	7.59	P<.01
Interaction	625.07	12	52.09	1.74	NS
Within Cell	13,842.40	468	29.90	-	-

*Cell N's are 25, except for physically handicapped N=8. Harmonic mean of cell frequencies = 22.6.

These total page estimates are presented in Table 8. The number in the lower portion of each cell is a projection computed by multiplying the total number of journals posted to each topic by group combination, by the sample average paper length that appears in the top of each cell. While these estimates are non-redundant the right and bottom marginal totals are redundant since the same journal article might be posted to more than one group or more than one topic. Nevertheless the grand total of over forty thousand journal pages is a large one. Note, however, that over sixty percent of this total is represented by pages of journals that have been posted to women, while the totals over all four topics are roughly only two thousand pages for the physically handicapped and for Hispanics, and under three thousand pages for the mentally handicapped. The ratios for topics are almost in the doubling order of 3, 6, 12, 24, with over seven and a half times as much journal literature on attitudes as on curriculum. The most extreme topic/group difference is between the 36 journal pages for physically handicapped/curriculum and the estimated 12,239 pages for women/attitudes.

TABLE 8

ESTIMATED NUMBER OF JOURNAL PAGES IN CIJE FOR EACH COMBINATION OF FOUR TOPICS AND FIVE GROUPS
(NUMBER OF ARTICLES, AVERAGE PAGE LENGTH, ESTIMATED TOTAL PAGES)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN
ATTITUDES	107 6.08	263 5.16	680 7.96	151 10.68	1,719 7.12
21,273	651	1,357	5,413	1,613	12,239
EMPLOYMENT	67 5.68	92 4.56	177 8.84	37 10.56	684 11.72
10,773	381	420	1,565	391	8,016
COUNSELING	126 5.72	90 5.40	168 5.40	34 6.24	544 7.48
6,395	721	486	907	212	4,069
CURRICULUM	8 4.50	80 5.80	89 7.52	31 5.84	195 8.24
2,957	36	464	669	181	1,607
41,398	1,789	2,727	8,554	2,397	25,931

3. Journal "scatter." Given the fact that CIJE currently indexes articles for over 800 journals, it may not be surprising to learn that it would be necessary to read quite a few journals to find the literature included in these CIJE samples. However, we were surprised to discover that the 483 articles included in the overall sample would require access to over two hundred journals, including several that no longer exist. To convey some overall idea of how many journals might have to be read three figures are displayed for each cell in Table 9. The first indicates the number of different journal titles included in each sample; the second indicates the number of journals that must be consulted to find half the articles in the sample (i.e., 13 articles); the last figure indicates the number of articles that appeared in the one most frequently represented journal. For example, the 25 articles for attitudes/physically handicapped appeared in 15 different journals; however, half of this sample (13 articles) could be found in just three journals, and one of these contained ten of the 25 articles in the sample. The most concentrated journal literature is counseling/physically handicapped, where two journals will cover half the sample and one journal contains twelve of these thirteen articles. However, even in this instance ten journals must be consulted to find all 25 articles. At the opposite extreme is attitudes/women, where each of the 25 articles in the sample appeared in a different journal. Inspection of the column averages reveals that the journal literature for the handicapped is concentrated in fewer journals, while the literature for Blacks and women is most dispersed.[12] Inspection of row averages indicates that there are no pronounced differences in journal dispersion for the four topics. The counseling literature tends to be slightly more concentrated (on the average, one must still consult more than five journals to find half the articles in samples of 25 articles) while literature on curriculum and on attitudes is slightly more dispersed (here, on the average, more than seven journals must be consulted to find half the articles in samples of 25 articles). We note that, overall, an average of 18 journals must be consulted to find 25 articles in a sample; nearly seven journals must be consulted to find half the number (13) of articles; and subscription to the one "key" journal in each topic/group area, would, on the average, expose the reader to about one-fifth of the articles in a sample of 25.[13]

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[12]The reader may note (see Table 1) that high journal title concentration in the sample tends to be associated with a high sampling fraction (fewer journals in the population), and low concentration is associated with a low sampling fraction. Excluding the aberrant curriculum/physically handicapped cell, the correlation between the half sample (HS) journal title count and the log (10) of the sampling fraction over the 19 cells is -.33. However, this correlation is not significantly different from zero.

[13]However, one journal, Rehabilitation Counseling Bulletin, covers 30 of the 100 articles in the four topic samples for physically handicapped. Two journals, Mental Retardation (15 articles) and Education and Training of the Mentally Handicapped (13 articles), cover 28 of the 100 articles in the samples for mentally handicapped. No single journal covers more than seven of the 100 articles in the four topic samples for Blacks, Hispanics, or women.

TABLE 9

NUMBER OF JOURNAL TITLES APPEARING IN FULL SAMPLES (FS), NUMBER OF JOURNAL TITLES APPEARING IN HALF SAMPLES (HS), AND NUMBER OF ARTICLES IN ONE (1) MOST FREQUENTLY APPEARING JOURNAL (A1J)

		PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Average
ATTITUDES	FS	15	11	23	21	25	19.0
	HS	3	2	11	9	13	7.6
	A1J	10	9	2	4	1	5.2
EMPLOYMENT	FS	13	15	22	20	19	17.8
	HS	3	4	10	8	7	6.4
	A1J	8	5	2	3	4	4.4
COUNSELING	FS	10	17	19	16	19	16.2
	HS	2	6	7	5	7	5.4
	A1J	12	6	5	4	4	6.2
CURRICULUM	FS	8*	15	21	18	23	19.2**
	HS	4*	3	9	6	11	7.25**
	A1J	1	8	4	4	2	3.8
Average	FS	12.7**	14.5	21.2	18.8	21.5	18.00**
	HS	2.67**	3.75	9.25	7.00	9.50	6.63**
	A1J	7.75	7.00	3.25	3.75	2.75	4.90

* There were only eight articles for this combination, each appeared in a separate journal. Hence this number of journal titles is not directly comparable with the number of journal titles in other cells.

** Excludes curriculum/physically handicapped.

Chi square tests of independence show that the topic and group marginal totals for full sample and half sample counts produce expected frequencies that closely fit the actual frequencies. Similar chi square tests of equal marginal distributions for totals of full samples and for half samples show that there is no significant difference for topics but that the difference for groups is significant. These results lead to three simple conclusions: 1) there <u>are</u> significant differences in the number of journals that must be consulted to cover the literature for different groups; 2) there are <u>no</u> substantial differences in the number of journals that must be consulted to cover the literature for topics pertaining to (these) special groups; 3) there is <u>no</u> interaction between group and topic.[14] Given these conclusions, the averages at the bottom of Table 9 deserve closest attention. Among other things, they tell us that subscription to as few as three or four journals might be sufficient to cover as much as half the articles (in samples of 25) for a specific topic for either the physically handicapped or mentally handicapped, while one would need to subscribe to twice that number of journals (approximately seven) to cover half the articles in one topic for Hispanics and to nine or more journals to cover half the articles on a topic for either Blacks or women. Subscription to just one "key" journal in any topical area would expose the reader to only a minor fraction of the (sample N=25) literature, ranging from less than a third of the articles for physically handicapped to less than one-ninth of the articles for women. The practical implication of these data on journal "scatter" is that even modestly adequate libraries or other information services must subscribe to a relatively large number of journals. (For example, an attempt to provide direct access to, say, half the available <u>CIJE</u> literature that might be found in an ERIC search on broad topical area such as those used in this study for a particular group would, on the average, require subscription to anywhere from three to ten journals per group. Allowing for some redundancy among groups (see Footnote 14), it still might require subscription to 20 to 30 journals to cover half the journal literature in one broad topical area for only these five groups.[15]

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[14]When non-redundant counts of journal titles are made over the five groups for each topic (125 journals) only a slightly different picture emerges with respect to topics. To cover the sample of 125 articles on counseling, one must consult 70 different journals, while 76 journals must be consulted on curriculum, 82 on employment, and 87 on attitude. Again, a chi square test against the hypothesis of equal expected journal title frequencies, leads to acceptance of the "no difference" hypotheses. The amount of redundency over the five groups may be gauged by comparing the average of 78.75 journal titles for these four non-redundant counts with the redundant count estimate of 90.0 journal titles per topic (5 groups by 18.00 journals per group).

[15]Ninety percent coverage of the 20 samples involved in this study (four topics, five groups) would require access to 164 journals. Recall that less than one third of the journal literature posted to the five groups is covered by these four topics. It becomes obvious that, given the highly dispersed nature of educational journal publication, only a very few libraries or information services can afford to maintain subscriptions to the number of journals needed to provide immediate access to large proportions of the <u>CIJE</u> literature posted to special groups.

TABLE 10

UNWEIGHTED MEANS ANALYSIS OF VARIANCE: LOGARITHM (BASE 10) FOR JOURNAL CIRCULATION FOR SAMPLES OF TWENTY TOPIC/GROUP COMBINATIONS

Cell Means and N's

	PHYSICALLY HANDICAPPED		MENTALLY HANDICAPPED		BLACKS		HISPANICS		WOMEN		Averages
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	
ATTITUDES	3.74	23	4.01	24	3.54	23	3.37	21	3.90	24	3.71
EMPLOYMENT	3.84	24	3.99	24	3.99	23	3.67	20	3.71	22	3.84
COUNSELING	3.67	25	4.10	23	3.83	23	4.02	22	3.63	22	3.85
CURRICULUM	3.91	8	4.04	23	4.07	21	3.92	19	3.78	22	3.94
Averages	3.79		4.04		3.86		3.74		3.76		3.84

Summary of Analysis of Variance*

Source of Variation	SS	df	MS	F	P level
Topics	2.803	3	0.934	-	-
Groups	4.692	4	1.117	-	-
Interaction	7.416	12	0.618	2.15	$p<.05$
Within Cell	119.313	416	0.287	-	-

*Harmonic mean of cell frequencies = 20.5714

4. Journal circulation. In the immediately previous section, we addressed the question of: How many different journals would one need to read to cover the sampled literature? In this section we would like to turn the question around to ask: How many persons might have read the sampled literature? Because some journals are read by more than one person, but not every reader will read all the articles in every issue, we have no reliable basis for answering the readership question. However, readership may be approximately proportional to circulation, which we can estimate, at least roughly. This was done as follows.

We first listed the journal titles for every article in the samples. The 483 articles in the samples are found in 212 journals. Of these 212 journals, 163 are currently listed in the CIJE Source Journal Index. The remaining 49 titles, not currently listed, represent journals that are either now defunct or that are not regularly searched. To estimate sample circulation, we began searching for the latest circulation data for all 212 journal titles by consulting a variety of sources (see page 12). Data on circulation was found for 181 journals (85%). To estimate the circulation for each of the 20 samples, the available circulation data for each journal title was matched to the article(s) in the samples.[16] Because the circulation distribution is highly skewed, with a range from five hundred to nearly two million, the raw circulation numbers were converted to logarithms (base 10) prior to running an unweighted means analysis of variance.[17] The results of this analysis appear in Table 10. Given the significant interaction ($P<.05$), we did not list the Fs for main effects, but proceeded to individual tests of the simple effects. The results of these tests are displayed in Table 11.

Table 11 indicates that the simple effects of topic differences is significant for the two ethnic groups--Blacks and Hispanics, but is not significant for the other three groups. Tests of differences among means show that the log average circulation for the Black curriculum sample (4.07) and for the Black/employment sample (3.99) are both significantly greater than for the Black/attitudes sample (3.54).[18] The Hispanic/counseling sample circulation (4.02) is

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[16]Due to multiple appearances of some journal titles, we were able to find a circulation number for 436 of the 483 articles in the sample (90%).

[17]It is again noted that this method assumes that missing data loss is essentially random. There is some evidence that this may be so, since a preliminary analysis based on 397 cases produced a grand mean (log 10) of 3.85 with a within cells mean square of 0.284. After finding data for 38 more cases the grand mean was 3.84 with a mean square error of 0.287.

[18]The antilogs of these means are approximately 11,750 and 9,900 vs. 3,470 circulation. Since a logarithmic transformation is involved, these values are geometric rather than arithmetic means of the sample circulation numbers.

TABLE 11

TESTS OF SIMPLE EFFECTS FOR TOPICS AND FOR GROUPS:
LOGARITHM (BASE 10) FOR JOURNAL CIRCULATION

	SS	d.f.	MS	F	P-level
Topic Effect for					
PHYSICALLY HANDICAPPED	0.695	3	0.232	0.81	NS
MENTALLY HANDICAPPED	0.142	3	0.047	0.16	NS
BLACKS	3.379	3	1.126	3.92	P<.01
HISPANICS	5.194	3	1.731	6.03	P<.01
WOMEN	0.808	3	0.269	0.94	NS
Group Effect for					
ATTITUDES	5.585	4	1.396	4.86	P<.01
EMPLOYMENT	1.868	4	0.467	1.63	NS
COUNSELING	3.551	4	0.888	3.09	P<.05
CURRICULUM	1.105	4	0.276	0.96	NS
Within Cell	119.313	416	0.287		

significantly higher than the Hispanic/employment (3.67) or the Hispanic/attitude (3.37) samples. The Hispanic/curriculum circulation (3.92) is significantly higher than the Hispanic/attitude circulation (3.37). (Note, this last difference parallels that obtained for Blacks.)

The tests of the simple effect of group differences on topics also yielded two significant results. There are significant differences among groups for attitudes (P<.01) and for counseling (P<.05), but not for the other two topics. Tests of means show that for attitudes, the circulation means for mentally handicapped (4.01) and women (3.90) are both significantly greater than the means for Blacks (3.54) and Hispanics (3.37). The mean for physically handicapped (3.74) is also greater than the mean for Hispanics.

For the counseling topic, the means for both mentally handicapped (4.10) and Hispanics (4.02) are significantly greater than the means for physically handicapped (3.67) and for women (3.63).

Inspection of these differences among means for simple effects shows that most of them consist of combinations involving the attitudes and counseling topics. When these topics are omitted (i.e., only circulation data for the five groups in combinations with employment and curriculum are considered) an analysis of variance of this reduced set of data shows no interaction effect and no difference between the two topics, but a significant differences for the group main effects with the circulations for the mentally handicapped (4.02) and Blacks (4.03) much larger than the circulation for Hispanics (3.80) and women (3.74). The circulation for physically handicapped is intermediate (3.88). Although this is a simpler set of results, it is achieved by considering only two of the four topics, and even in this case one must still consider differences among the groups. We conclude that estimates of circulation are perhaps most safely made by considering each group/topic sample separately.

Although logarithms provide an appropriate transformation for testing differences, they are harder to interpret since they represent geometric means rather than arithmetic means of the original data. Unfortunately, arithmetic means provide poor estimates due to the presence of a few extreme values, e.g., when one journal with a circulation of 1,810,000 is added to nineteen values averaging 10,000, the mean jumps from 10,000 to 100,000. To avoid this kind of distortion, Table 12 displays the circulation quartiles for each sample. The upper figure in each cell is the upper quartile and the lower figure is the lower quartile. The middle figure is the median. Half of the journals included in each sample have circulations within the range of the upper and lower figures. A fourth of the journals have circulations greater than the upper figure, and a fourth have circulations that are less than the lower figure.

We shall examine some, but not all, of the significant simple effect differences previously identified. Focusing on the medians, we see, perhaps more clearly the basis for the significant simple effects for topics in the Hispanic and Black columns. For Hispanics the median circulation for attitude journals is on 2,500 while it is 24,000 for curriculum journals, nearly a ten-fold difference. For Blacks the attitude circulation median (3,100) and counseling median (4,000) are much below the medians for the curriculum (13,500) and employment (12,700).

For group simple effects, the differences among groups are statistically most significant for attitude, where the circulation medians for mentally handicapped (11,500) and women (10,000) are much larger than those for journal literature posted to Blacks (3,100) and Hispanics (2,500). Counseling is the other topic that exhibited a significant simple effect for groups. Here, the medians for Hispanics (13,000) and mentally handicapped (11,600) are obviously much larger than those for women (3,500) and physically handicapped (3,000).

To summarize, the analysis of variance results indicate that there is a significant interaction effect that precludes making main effects comparisons of journal circulation data for topics or for groups. Tests of simple effects show that there are significant differences between groups for the attitude topic and for the counseling topic,

and that there are also significant differences between topics for the Black group and for the Hispanic group. The specific pairs of significant cell differences were identified.

TABLE 12

JOURNAL CIRCULATION QUARTILES FOR TWENTY SAMPLES
(CIRCULATION IN THOUSANDS)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN
ATTITUDES	8.0 3.0 3.0	11.6 11.5 11.5	5.3 3.1 1.5	3.5 2.5 1.2	25.0 10.0 1.8
EMPLOYMENT	26.0 3.4 3.0	12.0 11.6 7.0	26.0 12.7 2.4	15.4 4.8 1.6	12.7 6.2 1.8
COUNSELING	7.1 3.0 3.0	18.0 11.6 11.5	18.0 4.0 1.5	24.0 13.0 3.5	9.0 3.5 1.8
CURRICULUM	40.0 8.5 1.6	12.0 12.0 5.0	35.0 13.5 3.1	30.0 24.0 1.8	16.5 5.0 2.0

5. Clearinghouse distribution. This last section on the journal analysis looks at the ERIC Clearinghouses that accessed, abstracted, and indexed the journal articles contained in the samples. Over the eleven year period (1969-1979) twenty-three clearinghouse codes are represented, including all sixteen of the current ERIC Clearinghouses (CHs). To simplify the presentation, we have merged data from earlier and current CHs to correspond to current CH assignments.[19]

Given that there is a Counseling and Personnel Services CH, we would expect to see many of the journals of the counseling topic handled by this clearinghouse. Much of the employment literature might be handled by this CH or the Adult, Career and Vocational Education CH. We would also expect to see Reading and Communication Skills CH well represented for curriculum topics. It may be less obvious where the attitude literature would be processed; perhaps Counseling and Personnel Services and the CHs that tend to deal with special groups. Which CHs are these? Certainly, the Handicapped and Gifted CH might be expected to process much of the literature for the handicapped; the Urban Education CH might process some literature on Blacks and Hispanics, and the Rural Education and Small Schools CH might also process literature on Hispanics. There is good reason then to expect quite disproportional representation among the clearinghouses. But what does the distribution look like? Are there any surprises? Table 13 displays the data for the five groups, and Table 14 displays the data for the four topics. To facilitate comparisons, frequencies have been converted to percentages, expressed as the percentage of all journal articles for the group or the topic that were processed by the clearinghouse. Clearinghouses are listed, highest to lowest, by the overall percentage of journals in the total sample.

We first note that four clearinghouses account for approximately two-thirds of the sample of 483 journal articles, and seven CHs account for over eighty percent of the total sample. However, all sixteen Clearinghouses are represented. Given the choice of counseling as one of the four topics, it is not too surprising that the Counseling and Personnel Services CH (CG) should head the list, by processing approximately a quarter of all the journal articles. Table 14 shows that sixty percent of the counseling topics were processed by the CG clearinghouse. The surprise here may be the fact that as much as forty percent of the journals on this topic were processed by other CHs, CG is also one of the major contributors to the attitude and to the employment literature in these samples. CG processed half of all the physically handicapped articles, over a third of all the women's articles, approximately a fifth of the Black and Hispanic articles, but only eight percent of the articles dealing with the mentally handicapped.

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[19]Specifically, in terms of CH codes, articles processed by AC and VT were assigned to CE; AL to FL: LI to IR; and RE and TE to CS. Data on AA (LEASCO) was retained since there is no obvious assignment.

TABLE 13

PERCENTAGES OF CIJE JOURNAL ARTICLES FOR EACH OF FIVE GROUPS PROCESSED BY ERIC CLEARINGHOUSES

ERIC CLEARINGHOUSE	Code	PHYSICALLY HANDICAPPED N=83	MENTALLY HANDICAPPED N=100	BLACKS N=100	HISPANICS N=100	WOMEN N=100	ALL GROUPS N=483	CUM %
Counseling and Personnel Services	CG	51%	8%	21%	18%	37%	26.1%	26.1
Handicapped and Gifted Children	EC	11	77	3	0	0	18.4	44.5
Urban Education	UD	0	1	32	21	4	12.0	56.5
Adult, Career, and Vocational Education*	CE	23	4	10	5	10	9.9	66.4
Rural Education and Small Schools	RC	2	0	1	27	4	7.0	73.4
Higher Education	HE	1	0	3	3	14	4.3	77.7
Social Studies/Social Science Education	SO	0	0	5	7	2	2.9	80.6
Teacher Education	SP	6	3	1	1	1	2.3	82.9
Reading and Communication Skills	CS	1	1	3	1	5	2.3	85.2
Elementary & Early Childhood Education**	PS	0	1	3	1	4	1.9	87.1
Languages and Linguistics	FL	0	0	1	3	3	1.4	88.5
Educational Management	EA	0	0	2	3	1	1.2	89.7
Junior Colleges	JC	0	0	2	2	2	1.2	90.9
Science, Mathematics & Environmental Education	SE	0	1	0	1	3	1.0	91.9
Tests, Measurement, and Evaluation	TM	0	1	2	0	2	1.0	92.9
Information Resources	IR	1	1	1	1	0	0.8	93.7
Not Assigned (LEASCO)	AA	4	2	10	6	8	6.0	99.7
Total		100	100	100	100	100	99.7	

*formerly CAREER EDUCATION
**formerly EARLY CHILDHOOD EDUCATION

The major processor of articles for the mentally handicapped (77%) is, of course, the Handicapped and Gifted Children (EC) Clearinghouse. However EC deals almost exclusively with this one group; accounting for little or no articles dealing with women, Hispanics or Blacks; and surprisingly few articles for the physically handicapped. We have just noted that CG, not EC, is the primary processor for the physically handicapped, while EC is the primary processor for the mentally handicapped.[20] Table 14 indicates that EC rather evenly spans the full spectrum of topics regarding the mentally handicapped.

The Urban Education (UD) Clearinghouse, not surprisingly, is an especially heavy processor for both minority groups (Blacks 32%; Hispanics 21%). Table 14 indicates that this literature is especially concerned with employment, but also with attitudes and curriculum. (Most of the counseling literature for Blacks and Hispanics is processed by CG.)

The other major processor for Hispanic literature is the CH on Rural Education and Small Schools (RC), which processed 27 percent of the Hispanic sample of journal articles (dealing primarily with Mexican Americans).

The Adult, Career and Vocational Education (CE) Clearinghouse tends to mirror the Counseling and Personnel Services (CH) (at approximately half the percentages) in processing journal articles for all five groups; and, again like CG, especially heavily for the physically handicapped. This CE literature is primarily concerned with employment, but the other three topics are also represented.

The remaining clearinghouses each contribute less than five percent to the total sample.

Focusing now on the groups listed in Table 13, we see three clearinghouses (CG, 51%; CE, 23%; and EC 11%) account for 85 percent of all the journals on physically handicapped. As noted before, over three-fourths of the mentally handicapped literature is processed by EC. More than sixty percent of the literature for the two minorities and for women is processed by just three clearinghouses: For Blacks (UD, 32%; CG, 21%; CE, 10%); for Hispanics (RC, 27%; UD, 21%; CG, 18%); for women (CG, 37%; HE, 14%; CE, 10%).

Turning to Table 14 to see where topics are processed, we see that just two clearinghouses (CG, 60%; EC, 16%) account for almost two-thirds of the counseling articles. The literature dealing with the other three topics is more dispersed. Four clearinghouses (EC, 21%; CG, 20%; UD 14%; and RC, 10%) processed 65 percent of the attitude articles, and four clearinghouse (CE, 23%; CG, 18%; UD, 18%; EC 17%) processed 76 percent of the employment articles. Every clearinghouse made some contribution to the curriculum sample, with EC (20%), UD (12%), and HE (9%) processing the largest proportions.

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[20]Members of the ERIC system would not be surprised by this result, but it might surprise the average ERIC user to discover that the Handicapped and Gifted Clearinghouse does not access much of the literature for the physically handicapped.

TABLE 14

PERCENTAGES OF CIJE JOURNAL ARTICLES FOR EACH OF FOUR TOPICS PROCESSED BY ERIC CLEARINGHOUSES

		ATTITUDES	EMPLOYMENT	COUNSELING	CURRICULUM	ALL TOPICS
ERIC CLEARINGHOUSE	Code	N=125	N=125	N=125	N=108	N=483
Counseling and Personnel Services	CG	20	18	60	3	26.1
Handicapped and Gifted Children	EC	21	17	16	20	18.4
Urban Education	UD	14	18	5	12	12.0
Adult, Career, and Vocational Education*	CE	4	23	6	6	9.9
Rural Education and Small Schools	RC	10	8	4	6	7.0
Higher Education	HE	0	6	2	9	4.3
Social Studies/Social Science Education	SO	4	2	0	6	2.9
Teacher Education	SP	2	2	1	5	2.3
Reading and Communication Skills	CS	5	1	1	3	2.3
Elementary & Early Childhood Education**	PS	5	0	1	2	1.9
Languages and Linguistics	FL	2	1	0	4	1.4
Educational Management	EA	1	2	0	3	1.2
Junior Colleges	JC	1	0	0	5	1.2
Science, Mathematics & Environmental Education	SE	2	0	0	3	1.0
Tests, Measurement, and Evaluation	TM	3	0	0	1	1.0
Information Resources	IR	1	1	0	2	0.8
Not Assigned (LEASCO)	AA	8	2	4	10	6.0
Total		103	101	100	100	99.7

*formerly CAREER EDUCATION
**formerly EARLY CHILDHOOD EDUCATION

In general, these results make sense. Although the counseling literature has been assigned primarily, but hardly exclusively, to one CH, there is no such specialization for the other three topics; although one of the reasons that CE appears so high on the list is due to its heavy contribution to processing the employment literature. The other top CHs tend to appear high in Table 14 primarily because of their high positions in processing journal articles for one or more groups (e.g., CG for physically handicapped and for women; EC for mentally handicapped; UD for Blacks; RC and UD for Hispanics). The reader should note that the choice of special groups and of topics is responsible for the particular results displayed in Tables 13 and 14. Other groups and other topics could produce decidedly different orderings among the clearinghouses.[21] However, the general pattern for any heterogenous choice of groups and topics is probably evident. There will be disproportional contributions; typically only a few clearinghouses will account for the major portion of the literature; but most of the clearinghouses may be represented.

6. Summary of CIJE content analysis. The CIJE journal samples display significant group or topic differences in every area we examined, namely: average date of publication, average page length, number of journal titles represented in the samples, sample circulation size, and clearinghouse distribution.

With publication dates ranging from 1969 to 1979, the average CIJE article in the total sample is early 1974; however, the publication date averages for women and for physically handicapped are at least a year more recent than the averages of the other three groups. Overall, CIJE articles average approximately seven pages in length. However the articles for both handicapped groups average less than six pages, while those for Hispanics and women average over eight pages. Articles on counseling topics average approximately six pages, but those for employment topics average over eight pages.

There are substantial differences in how many journals are represented in these samples and also in how widely they are circulated. Generally, the journal literature in the field of education is highly dispersed. This is certainly true for most of these group/topic samples. The 483 CIJE articles included in this study were found in over two hundred different journals. Typically, one would need to subscribe to six or seven journals per group/topic combination in order to find even half the articles in each sample of 25 articles. However there is a wide range (2 to 13 journal titles) to achieve "50% coverage." To cover all 25 articles in each group/topic sample, one must consult 8 to 25 different journals. There are also vast differences in circulation size. A significant topic by group interaction effect makes it difficult to generalize concerning overall circulation or concerning

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[21]For example, omitting the mentally handicapped group would most certainly cause EC to drop toward the very bottom of the list. Adding a topic such as assessment and testing would most certainly move TM toward to top of the list.

differences among topic or among groups. Moreover, the extreme differences among circulation figures for individual journals (500 to 1,800,000) tend to seriously distort the arithmetic averages. Median circulations for the 20 topic/group samples range from 2,500 to 24,000, indicating that there are vastly different levels of circulation.

Finally, we noted the proportion of the journal articles that were processed by the 16 current ERIC clearinghouses or their respective predecessors. Given the specialization of the clearinghouses, and the specific topics and groups that were considered in these CIJE samples, it comes as no surprise to find greatly different proportional contributions. In fact two-thirds of the total sample of articles were processed by only four clearinghouses, but all sixteen clearinghouses are represented in the sample. Despite the heavy concentration in a few clearinghouses, it should be noted that in only one group (the physically handicapped) and in only one topical area (counseling) does a single clearinghouse process as much as half the articles included in these samples.

F. RIE Content Analysis Results for Group Differences

1. Introduction. Because many more variables were coded (see page 14) in the content analysis of Research in Education (RIE) documents, the results of the RIE analysis are much more extensive than those reported in the previous section on CIJE articles. We shall begin with an examination of two continuous variables that were examined by analysis of variance. The variables are: year of publication and page length. For these variables, a two-way analysis of variance (4 groups by 5 topics) was performed, using the unweighted means procedure to handle missing data.

We shall then examine differences among the five groups on several "qualitative" variables: These include: type of sponsor, type of performer, publication type, microfiche and hardcopy availability, sex of all authors, and number of equity groups identified in citation/abstract. These differences will be presented in the form of cross tabulations that were tested by chi square tests. Where significant chi squares are found, the adjusted residuals of cells are computed and reported.

In the following section (Section G), we shall examine the interrelationships among a number of variables including: topic content area, semi-decade of publication, sponsor type, performer type, publication type, availability in microfiche or hardcopy, authors' sex, number of equity groups identified, and page length.

2. RIE publication dates. Table 15 displays the means and analysis of variance results with respect to RIE publication dates. In this analysis, there is no evidence for an interaction effect or for a main effect with respect to topics. There is a significant effect for groups. Tests of differences among the averages over topics for groups (bottow row of cell means table), indicates that the women's RIE document literature is significantly more recent (74.12) than that of any of the other four groups, while the RIE

document literature for the mentally handicapped (70.81) is significantly older than that for the physically handicapped (72.67) or for women (74.12).

TABLE 15

UNWEIGHTED MEANS ANALYSIS OF VARIANCE: PUBLICATION DATES (MINUS 1900) FOR RIE DOCUMENTS FOR SAMPLES OF TWENTY TOPIC/GROUP COMBINATIONS

Cell Means and N's

	PHYSICALLY HANDICAPPED		MENTALLY HANDICAPPED		BLACKS		HISPANICS		WOMEN		Averages
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	
ATTITUDES	72.40	25	70.88	25	72.04	25	71.80	25	73.72	25	72.168
EMPLOYMENT	72.88	25	71.40	25	73.12	25	71.92	25	74.60	25	72.784
COUNSELING	72.32	25	69.68	25	71.40	25	70.84	25	73.52	25	71.552
CURRICULUM	73.08	25	71.28	25	71.12	25	71.60	25	74.64	25	72.344
Averages	72.67	100	70.81	100	71.92	100	71.54	100	74.12	199	72.212

Summary of Analysis of Variance*

Source of Variation	SS	df	MS	F	P level
Topics	96.09	3	32.03	1.63	NS
Groups	633.59	4	158.40	8.05	P<.001
Interaction	61.72	12	5.14	0.26	NS
Within Cell	9,445.44	480	19.68	-	-

*Harmonic mean of cell frequencies = 25. There are no missing data for this variable.

3. RIE document page length. Table 16 displays the results of the analysis for page length. Here again there is no evidence for an interaction effect. But the topic main effect is significant, while there is no significant main effect for groups.[22] In this instance we should focus on the average, over groups, displayed in the right margin. They indicate that, while RIE attitude documents average approximately 83 pages, the employment documents average approximately 132 pages. Tests of the differences for these averages indicate that there is a significant difference between these two extremes, but neither is significantly different from the intermediate averages for counseling (approximately 105 pages) and curriculum (approximately 108 pages).

TABLE 16

UNWEIGHTED MEANS ANALYSIS OF VARIANCE:
RIE DOCUMENT PAGE LENGTH FOR SAMPLES OF TWENTY TOPIC/GROUP COMBINATIONS

Cell Means and N's

	PHYSICALLY HANDICAPPED		MENTALLY HANDICAPPED		BLACKS		HISPANICS		WOMEN		Averages
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	
ATTITUDES	70.83	23	110.48	23	99.32	25	65.42	24	66.56	25	82.52
EMPLOYMENT	145.48	25	107.32	25	132.52	25	161.04	23	113.04	25	131.88
COUNSELING	132.46	24	106.91	22	84.21	24	98.20	25	101.96	25	104.75
CURRICULUM	147.83	24	118.12	24	97.91	23	74.92	25	102.84	25	108.33
Averages	124.15		110.71		103.49		99.90		96.10		106.87

Summary of Analysis of Variance*

Source of Variation	SS	df	MS	F	P level
Topics	148,009.	3	49,336.	4.13	P<. 01
Groups	47.299.	4	11,825.	0.99	NS
Interaction	143,548.	12	11,962.	1.00	NS
Within Cell	5,538,929.	464	11,937.	-	-

*Harmonic mean of cell frequencies = 24.1633

[22] A three-way analysis of variance (4 topics by 5 groups by 5 accession blocks of 5 documents each) was also run. Since there was no significant interaction involving accession blocks and no significant main effect for accession blocks, the results of this more complex analysis are not presented. The lack of significant effects for accession blocks means that there is no evidence, at least for these 20 samples, that would indicate that average RIE document length has varied appreciably over the history of the ERIC system (more than 15 years). A similar three-way analysis for publication date yields spurious results since publication date and accession order are very highly correlated.

The next several sections deal with nominal variables which were cross tabulated, and then tested by chi square analyses.

4. Type of sponsor. Table 17 displays the frequency counts, adjusted residuals, and significance levels for the cross tabulation of groups with type of sponsor.

The right margin of Table 17 displays the number and percentage of the 500 RIE documents, classified by type of sponsor. Since RIE routinely acquires the final and other significant reports of nearly all federally-sponsored research in education, it is not surprising that federal sponsors account for the largest portion (43%) of RIE documents. Among other types of sponsors, the next largest sponsor type is state/local education agencies (10%), then publishers (7%), foundations and other agencies (7%), and state agencies other than state education agencies (2%). Nearly one-third (31%) of the RIE document samples could not be identified as to sponsor. (This is especially true for speeches and presentations at meetings.)

Because there are exactly 100 documents in the sample for each of the five groups, the cell frequencies may be read as percentages for each group. For example, 55 percent of the physically handicapped documents were federally sponsored, while only 29 percent of the Blacks documents were federally sponsored. Given a highly significant chi square test ($p<.001$), adjusted residuals were computed. The adjusted residuals associated with these two cells are both significant (** = $P < .05$) indicating a higher than expected value (+2.7) for the physically handicapped and a lower than expected value (-3.2) for Blacks.

The frequencies for Hispanics and for women display no significant discrepancies, i.e., the actual frequencies are close to the expected frequencies. (This can be verified by comparing cell values (with corresponding percentages in the total column). Sponsorship for the other three groups deviates from the expected. For the physically handicapped, we find significantly higher than expected sponsorship by federal and other (noneducational) state agencies, but a lower than expected number of documents with no identifiable sponsorship. For the mentally handicapped, we find higher than expected numbers of documents sponsored by state/local education agencies and publishers, but fewer than expected documents sponsored by foundations and "other" types of sponsors. For Blacks, we find fewer than expected documents indicating federal sponsorship and more than the expected number of documents with no identifiable sponsor.

5. Type of performer. As noted previously, the institutional affiliation of the first author was used to classify documents in terms of the type of institutional performer of the work resulting in the RIE document. Table 18 displays the results of the cross tabulation of groups by type of performer. We first note that the chi square test for this table is highly significant. (This will be considered later.) We see (right margin) that first authors of RIE documents are most frequently associated with universities (43%). Local agencies (usually school districts) and non-profit/for-profit

TABLE 17

CROSS TABULATION FREQUENCIES AND ADJUSTED RESIDUALS:
FIVE GROUPS BY SIX SPONSOR TYPES
(X^2 = 51.27; P<.001)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
FEDERAL AGENCY	55 +2.7**	40 -0.7	29 -3.2**	45 +0.7	45 +0.4	214 (43%)
STATE OR LOCAL EDUCATION AGENCY	10 +0.1	15 +2.0**	10 +0.1	8 -0.6	8 -0.6	51 (10%)
PUBLISHER	6 -0.5	16 +3.8***	5 -1.0	6 -0.4	3 -1.8	36 (7%)
FOUNDATIONS AND OTHER AGENCIES	4 -1.3	2 -2.1**	11 +1.8	10 +1.5	7 +0.1	34 (7%)
OTHER STATE AGENCY	5 +2.1**	2 -0.2	1 -0.9	2 -0.1	1 -0.9	11 (2%)
NO SPONSOR IDENTIFIED	20 -2.7**	25 -1.4	44 +3.1**	29 -0.3	36 +1.2	154 (31%)
Total	100	100	100	100	100	500

organizations each contribute 15 or 14 percent. State agencies (usually the state educational agency); federal agencies; associations, councils and commissions; and publishers each contribute 6 to 8 percent. The remaining 16 documents (approximately three percent) include six that were produced by foundations, and ten documents that could not be classified. Neither group is large enough to include in the chi square test so they were omitted from Table 18. For this reason, there are fewer than 100 documents for each group. Where percentages are different from the cell frequencies, the percentage appears in parentheses in each cell. Cells where the actual frequency is significantly different from the expected frequency are flagged by asterisks (** indicates P<.05; *** indicates P<.01) beside the adjusted residuals. Positively signed adjusted residuals indicate the actual value is higher than the expected. Negatively signed residuals indicate the actual frequency is lower than the expected frequency. For example, there are 50 documents posted to women whose first author was university based (top left cell). Multiplying the corresponding marginal totals and then dividing by the grand total [(207 X 96)÷484=41.06] we find that the expected frequency for this cell is 41.06. The actual frequency of 50 is approximately 9 higher. When the cell residual is "adjusted" (see Appendix B), we obtain an approximately standard normal variable of 2.1 which exceeds the value of 1.96 (the 97.5 percentile of the standard normal distribution) and thus indicates that this discrepancy is significant (at the .05 level for a two-tail test of either positive or negative differences).

There are 6 cells in the 35 cell table where the discrepancies between expected and actual frequencies are significant. For the physically handicapped, we find more than the expected number of non-profit/for-profit organizations and few local agencies contributing to this litature. For the mentally handicapped, we see that the actual frequencies are not significantly different from the expected for all but one performer type: publishers are represented by 16 RIE documents on the mentally handicapped (whereas approximately seven would be expected). The Black literature shows no significant discrepancies. The Hispanic literature is marked by only one discrepancy: here there are only eight documents produced by first authors affiliated with non-profit/for-profit organizations, while approximately 14 would be expected. We have already noted that there are significantly more documents in the women's sample that were produced by university affiliated authors. There are also significantly fewer documents that have been produced by authors associated with local (usually school district) agencies (7 actual vs. 14.08 expected).

These significant cell discrepancies can also be viewed row-wise, e.g., universities contribute 35 to 52 percent of the literature for each group, and significantly more (52%) to the women's literature than would be expected; non-profit/for-profit organizations from eight to 23 percent of the literature for each group. The eight percent for Hispanics is significantly less than would be expected, while the 23 percent is greater than would be expected. Since this class of agencies depends primarily on external funding, the differences here probably reflect differences in sponsor funding. Referring back to Table 17, we see that federal sponsorship and "other" state agencies are significantly higher than expected for

TABLE 18

CROSS TABULATION FREQUENCIES AND ADJUSTED RESIDUALS:
FIVE GROUPS BY SEVEN PERFORMER TYPES
($X^2 = 58.27$; $P<.001$)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
UNIVERSITIES	34 (35%) -1.7	34 (35%) -1.8	41 (44%) +0.2	48 (48%) +1.3	50 (52%) +2.1**	207 (43%)
NON-PROFIT/FOR-PROFIT AGENCIES	22 (23%) +2.7**	10 -1.3	12 (13%) -0.5	8 -2.0**	17 (18%) +1.1	69 (14%)
LOCAL AGENCIES	8 -2.0**	19 +1.5	18 (19%) +1.4	19 +1.4	7 -2.3**	71 (15%)
STATE AGENCIES	12 +1.9	12 +1.8	4 -1.4	7 -0.3	3 -1.9	38 (8%)
FEDERAL AGENCIES	6 -0.1	4 -1.1	6 0.0	6 -0.2	9 +1.3	31 (6%)
ASSOCIATIONS, COUNCILS & COMMISSIONS	9 +1.0	3 -1.7	8 +0.6	7 0.0	7 +0.1	34 (7%)
PUBLISHERS	6 -0.4	16 +4.0***	5 -0.7	4 -1.3	3 -1.7	34 (7%)
Total	97	98	94	99	96	484

the physically handicapped sample; however, federal (or other types of sponsorship) are not significantly discrepant for Hispanics.

Local agencies contribute less than expected to the physically handicapped and to women's literature. State agencies, federal agencies, and the combination of associations, councils and commissions, are undifferentiated--they contribute about the expected amounts to each of the five groups. Finally, we see that nearly half (16) of all (34) publisher's documents (usally books) are part of the literature on the mentally handicapped/retarded. With the exception of this last discrepancy, none of the significant discrepancies are remarkably large. Perhaps it is more remarkable that in 29 of the 35 cells, there are no significant discrepancies.

We conclude that different types of performer institutions do contribute in somewhat different ways to the literature represented in the samples for these five groups. However, although these are statistically significant discrepancies, in no case is there a cell percentage which is more than nine percentage points lower or higher than the right margin percentages (total for five groups). The largest differences in the entire table show university-based authors producing 35 percent of the literature for both handicapped groups, while they produce 52 percent of the literature in the women's sample.

6. Type of document. Table 19 displays the cross tabulation results for the five groups and for nine inclusive classifications of publications. Again, there is a highly signficant chi square test, indicating that there are signficant differences across the five groups in the types of publications that appear in their samples of RIE documents. The publication types have been arranged in descending order of total frequencies of appearance in the overall sample of 500 documents. Because there are exactly 100 documents for each group, the cell frequencies are also interpretable as percentages totaling to 100 over the nine publication classifications. Research reports (technical reports, studies) is the largest single type of publication, accounting for 28 percent of the total sample, with a range from 20 percent for physically handicapped to 37 percent for women. Both the adjusted residuals for these two extremes just exceed the .05 signficance level, indicating that there are signficantly fewer than the expected number (28.4) of research reports for the physically handicapped and significantly more for women. This difference (37% vs. 20%) is the largest to be found in the table.

Project/program descriptions (implementation efforts, evaluations) constitute the next largest group of documents, accounting for 18 percent of the sample. All five groups are rather evenly represented by this type of publication. There are no significant discrepancies between actual and expected frequencies.

Speeches (including conference reports, "Papers presented at...", verbal presentations, etc.) is the third highest classification, representing 12 percent of all RIE documents in the combined sample. There is one signficant cell discrepancy indicating that the 20 (percent) of all RIE documents in the Black sample in this class is significantly higher than the number expected (12.4).

TABLE 19

CROSS TABULATION FREQUENCIES AND ADJUSTED RESIDUALS:
FIVE GROUPS BY NINE PUBLICATION TYPES
(X^2 = 80.38; P<.001)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
RESEARCH REPORTS	20 -2.0**	26 -0.6	33 +1.1	26 -0.6	37 +2.1**	142 (28.4%)
PROJECT DESCRIPTIONS & EVALUATIONS	20 +0.5	18 -0.1	17 -0.3	23 +1.4	13 -1.5	91 (18.2%)
SPEECHES	7 -1.8	7 -1.8	20 +2.6**	15 +0.9	13 +0.2	62 (12.4%)
CURRICULUM MATERIALS	14 +1.8	15 +2.1**	3 -2.5**	6 -1.3	9 -0.2	47 (9.4%)
BOOKS	11 +0.7	11 +0.7	7 -0.9	11 +0.7	6 -1.2	46 (9.2%)
GUIDES	11 +1.9	13 +2.8**	2 -2.1**	3 -1.7	5 -0.8	34 (6.8%)
PROCEEDINGS	10 +2.4**	4 -0.6	3 -1.1	6 +0.4	3 -1.1	26 (5.2%)
BIBLIOGRAPHIES, REVIEWS, LISTS	6 +0.7	6 +0.7	1 -1.9	4 -0.3	6 +0.7	23 (4.6%)
OTHER TYPES OF PUBLICATIONS	1 -2.2**	0 -2.8**	14 +3.9***	6 +0.1	8 +1.1	29 (5.8%)
Total	100	100	100	100	100	500

Considering the fact that one of the four topics on which the samples were structured is curriculum, it may be surprising that only 47 documents (9%) were actually curriculum materials.[23] Within this classification, we see that the mentally handicapped sample contains significantly more (15%) and the Black sample contains signficantly less (3%) than expected (9.4%).

The 46 books (monographs, textbooks, etc.) also constitute nine percent of the overall sample. All five groups are approximately evenly represented by this class of publication.

Guides (teaching guides, resource guides, study guides, administrative guides, manuals) is the next largest class, representing seven percent of the sample. We see that mentally handicapped is significantly larger (13%) while the percentage for Blacks is significantly smaller (2%) than the expected value (6.8%).

Proceedings (conferences' records, complete minutes of meetings) is seventh in this list of nine, and constitues five percent of the total sample. The ten (percent) of the physically handicapped sample in this class is nearly twice the expected value (5.2%).

Next to last in the list is bibliographies (including annotated bibliographies, book catalogues, abstracts, literature review, literature search/guides, indexes, state of the art reviews, etc.). Approximately five percent (4.6%) of the total sample is in this class. There are no significant discrepancies among the five groups, although only one item appears in the Black sample.

The final classification is a catchall that includes: theses and dissertations, journals and serials, directories and questionnaires, and measurement devices. This miscellaneous category constitutes approximately six percent of the sample. The Black sample is heavily overrepresented (14% including: 9%, theses and dissertations; 5%, journals and serials), while both handicapped groups are signficantly underrepresented in this category.

We leave to the reader to note for each group, how the literature is distributed by publication type and where there are signficant discrepancies. We note, however, that the two minority groups are remarkably different. The Hispanic group displays no significant discrepancies, while there are four signficant discrepancies for Blacks.

We again note that, while the overall pattern is highly significant, few of the cell differences are truly extraordinary. The largest discrepancies are no more than ±nine percentage points of the right margin percentages. The RIE literature for the five groups is

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[23]As we shall see later, the 125 curriculum documents are distributed among all nine of the publication type classifications indicated in Table 19, with only 30 percent of the 125 classified as curriculum materials.

significantly different in the types of publications found, but few of these differences are especially large.[24]

7. RIE document availability. One of the remarkable aspects of the ERIC RIE data base is that most of the documents can be obtained in microfiche or hardcopy forms from one of several central facilities (usually the ERIC Document Reproduction Service, but also National Technical Information Service, and University Microfilms). Tables 20 and 21 provide information on the microfiche and hardcopy availability for the five equity groups. Since neither chi square is significant, there is no evidence of major differences among the groups in terms of the availability of their RIE literature: 87 percent of the total sample is available in microfiche and 77 percent is available in hardcopy. The somewhat lower availability of microfiche documents for the mentall handicapped may be explained partially in terms of the relatively larger number (16%) of publishers (see Table 18) represented in this sample, who may prefer not to give copy releases for their publications.

The impressive point about Tables 20 and 21 is that one can easily obtain copies of at least 80 percent (and sometimes as high as 90 percent) of the RIE literature for any group in microform, and that one can usually obtain more than three-fourths of this literature in hard copy.

TABLE 20

CROSS TABULATION FREQUENCIES:
FIVE GROUPS BY AVAILABILITY OF DOCUMENT IN MICROFICHE FORM
(X^2 = 6.00; P=.20)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
MICROFICHE AVAILABLE	90	80	88	86	90	434 (87%)
MICROFICHE NOT AVAILABLE	10	20	12	14	10	66 (13%)
Total	100	100	100	100	100	500

[24]The mentally handicapped and the Black groups present perhaps the most marked contrasts; especially with respect to speeches (7% vs. 20%), curriculum materials (15% vs. 3%), guides (13% vs. 2%), and "other" types of publications (theses; journals) (0% vs. 14%).

TABLE 21

CROSS TABULATION FREQUENCIES:
FIVE GROUPS BY AVAILABILITY OF DOCUMENT IN HARD COPY FORM
(X^2 = 1.00; P=.89)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
HARD COPY AVAILABLE	78	80	77	78	74	387 (77%)
HARD COPY NOT AVAILABLE	22	20	23	22	26	113 (23%)
Total	100	100	100	100	100	500

8. Author identity. In this section, we shall look for differences in authorship of RIE documents among the five equity groups along two dimensions. First, what are the relative proportions of documents which have individuals identified as authors versus documents that show only corporate or anonymous authorship? Second, where individual author(s) are identified, what are the proportions by sex? Tables 22 and 23 display these data for the five groups. Table 22 indicates that there are significant differences among the five groups in the proportions of the samples of documents that are authored by identified persons as opposed to anonymous authorship. The samples for Blacks and women have significantly higher percentages of individual authors, while the handicapped samples, especially for the physically handicapped, show a larger percentage of anonymous authors. As we shall see, type of performer (e.g., university vs. state educational agency) and type of publication (e.g., speech vs. report of proceedings) account for these differences in author identification.

Table 23 looks at the 399 documents where the individual author(s) were identified to examine the sex of the first author. The highly significant chi square tells us that there are group differences. The adjusted residuals flag the women's group as the significantly discrepant group. And we find almost a complete reversal in percentages. While 67% to 71% of the literature for the samples of the other three groups have a male first author, 62% of the women's documents have a female first author.[25] There is no significant difference among the other four groups.

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[25]When sex of first and second authors is considered, the pattern is similar. Only 32 to 41 percent of the samples for handicapped or ethnic groups, where authors were identified, involved a woman as first or second author, while 69 percent of the women's sample involved a woman as first or second author.

TABLE 22

CROSS TABULATION FREQUENCIES AND ADJUSTED RESIDUALS:
FIVE GROUPS BY IDENTIFIED INDIVIDUAL AUTHOR VS. ANONYMOUS AUTHOR
(X^2 = 17.79; P<.002)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
IDENTIFIED INDIVIDUAL AUTHOR(S)	69 -3.0**	73 -1.9	88 +2.3**	82 +0.6	87 +2.0**	399 (80%)
ANONYMOUS AUTHOR	31 +3.0**	27 +1.9	12 -2.3**	18 -0.6	13 -2.0**	101 (20%)
Total	100	100	100	100	100	500

TABLE 23

CROSS TABULATION FREQUENCIES AND ADJUSTED RESIDUALS:
FIVE GROUPS BY SEX OF FIRST AUTHOR
(X^2 = 3.29; P<.001)*

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
MALE FIRST AUTHOR	46 67% +0.9	50 68% +1.3	62 70% +1.9	58 71% +1.8	31 36% -5.7***	247 62%
FEMALE FIRST AUTHOR	23 33% -0.9	23 32% -1.3	26 30% -1.9	24 29% -1.8	56 64% +5.7***	152 38%
Total	69	73	88	82	87	399

*When the women's group is omitted (X^2 = 0.94; P = 0.38).

9. Number of equity groups identified. As we examined the 500 abstracts included in the RIE samples, we noticed differences in the extent to which the documents focused exclusively on one group, dealt with a few groups, or provided information on many groups. We then coded every document's citation/abstract into one of three classes: 1) only one equity group is identified; 2) two or three groups are identified; or 3) more than three groups are identified. We recognized and counted a large number of special groups beyond the five that are the focus of this study (e.g., rural youth, institutionalized, migrants, economically disadvantaged, American Indians, Asians), but we counted synonymous or similar terms/identifiers only once.

TABLE 24

CROSS TABULATION FREQUENCIES AND ADJUSTED RESIDUALS:
FIVE GROUPS BY NUMBER OF EQUITY GROUPS IDENTIFIED
(X^2 = 31.21; P<.001)

	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	Total
ONE GROUP	32 -4.3***	65 +3.1**	52 +0.2	46 -1.2	61 +2.2**	256 51%
TWO OR THREE GROUPS	49 +2.5**	27 -2.6**	39 +0.2	42 +0.9	34 -1.0	191 38%
MORE THAN THREE GROUPS	19 +3.0**	8 -0.9	9 -0.6	12 +0.6	5 -2.0**	53 11%
Total	100	100	100	100	100	500 100%

Table 24 displays the results. Approximately half of the documents in the total sample focus on one group, but 38 percent identify two or three different groups and 11 percent identify more than three groups. The highly significant chi square test indicates that there are significant differences among the five samples. Both the women's and the mentally handicapped samples display markedly higher than average focus on their one group, while the literature on the physically handicapped is characterized by higher than average treatment of several groups (typically describing several different physically handicapping conditions and sometimes discussing special conditions for women, minorities, the institutionalized, etc.).

10. Summary of the RIE document analysis. The preceding analysis shows that the samples of RIE documents for the five equity groups are significantly different along a number of dimensions including: average age of the literature, sponsorship, type of institutional performer, type of document, authorship, and single/multiple group focus of the documents' contents. Only two characteristics showed no difference among groups: average page length and availability in microfiche or hardcopy.

As of early 1980, the average publication date for the RIE documents in these samples was early 1972, but the women's literature has a significantly more recent average (early 1974), while the mentally handicapped average is significantly earlier (late 1970). The average length for all RIE documents in the sample is 107 pages. There are no differences for groups; however, document length does vary with topic, with an average of 83 pages for attitude topics and 132 pages for employment topics.

Who sponsors the work reported in RIE documents, which types of institutions perform the work, and what types of publications/formats it appears in, all vary significantly over the five groups. Overall, more than forty percent of the sample was federally sponsored, and federal, state, and local agencies together account for 55 percent of all documents. There are several differences among the samples of the five groups, e.g., a significantly higher proportion of documents in the women's sample are produced by university based authors; larger than expected amount of the physically handicapped samples are produced by non-profit/for-profit agencies; and publishers are notable contributors to the mentally handicapped sample. RIE contains a wide variety of types of documents. When classified by eight specific and one miscellaneous classifications, we find that over one-fourth of the documents are research reports. Research reports, project descriptions, and speeches constitute sixty percent of the total sample of 500 RIE documents. There are several significant differences among the groups in the percentage of documents that are of one type or another. For example, the women's sample contains almost twice the percentage (37%) of research reports when compared to the physically handicapped (20%). There are no overall differences among the five groups in availability in either microfiche or hardcopy forms. Over three-fourths of the sample can be ordered from central facilities (e.g., EDRS, NTIS) in full-size hardcopy, and from 80 to 90 percent of the samples for the five groups are available in microfiche.

The samples of documents for the five groups differ in their author identification, with substantially more individual authors for the women and Black samples, and a larger percentage of corporate (anonymous) authorship for the handicapped. There is a complete sex reversal in the authorship of women's documents as compared to the other four groups. While 64 percent of the first authors of the women's samples are female, 67 to 71 percent of the first authors in the other four samples are male. Finally, there are some substantial differences among the five groups in the singularity of focus of their document literature. For example, nearly two-thirds of the samples for mentally handicapped and women (65% and 61% respectively) focus exclusively on those groups, while only one-third (32%) of the physically handicapped sample deals exclusively with that group.

G. Interrelationships Among Other RIE Content Analysis Variables

1. Overview. In the preceding section we focused primarily on examination of differences among the five equity groups in terms of the various RIE content analysis variables. We now turn to a briefer examination of the interrelationship among these variables. Table 25 provides an overview in matrix form. The cells at the intersection of each row and column indicate the results of chi square (or analysis of variance) tests for the designated variables. Empty cells signify that the chi square test for independence between the two variables is accepted. Asterisks signify that the test for independence is rejected and at what significance probability (P) levels (* = P <.05; ** = P <.01; *** = P <.001).[27]

TABLE 25

MATRIX OF TEST RESULTS FOR RELATIONSHIPS AMONG RIE CONTENT ANALYSIS VARIABLES

	GPS	TOPIC	PUB. DATE	PUB. TYPE	SPON.	PERF.	COPY AVAIL	ANON. AUTH.	SEX AUTH.	NR GRS	PAGES
GROUPS	—	—	***	***	***	***		**	***	***	
TOPICS	—	—		***	**	***		**	*	**	**
PUBLICATION DATES	***		—	***	***	***	***		**	*	
PUBLICATION TYPE	***	***	***	—	***	***	***	***	*	**	***
SPONSOR TYPE	***	**	***	***	—	***	***	***			***
PERFORMER TYPE	***	***	***	***	***	—	***	***			***
COPY AVAILABILITY			***	***	***	***	—	***			***
ANONYMOUS AUTHOR	**	**		***	***	***	***	—			*
SEX OF AUTHOR	***	*	**	*					—		**
NUMBER OF GROUPS	***	**	*	**						—	
PAGE LENGTH		**		***	***	***	***	*	**		—

[27] Where analysis of variance tests are involved, the test is for mean differences on the continuous variable over levels of the categorical variable.

The first row and column identifies the significant differences among the five equity groups that have already been identified. The remaining variables are discussed below.

2. Topics. Aside from no differences among the four topics (attitudes, employment, counseling, and curriculum) in publication dates and in copy availability, there are significant differences for all other variables. The five topics display vastly different proportions by publication type, as indicated in Table 26. Publication types have been listed in this table by descending order for total percentages.

TABLE 26

PERCENTAGE OF RIE DOCUMENTS BY PUBLICATION TYPE
FOR EACH OF FOUR TOPICS
(X^2 = 150.35; P<.0001)

	ATTITUDES N=125	EMPLOYMENT N=125	COUNSELING N=125	CURRICULUM N=125	TOTAL N=500
Research reports	39	40	22	12	28
Project descriptions	6	18	26	22	18
Speeches	18	10	13	9	12
Curriculum materials	2	2	4	30	9
Books	17	11	6	2	9
Guides	6	3	12	6	7
Proceedings	4	6	7	4	5
Bibliographies, reviews	2	4	6	6	5
Theses	5	2	2	6	4
Journal articles	1	2	1	2	2
Directories	0	1	1	0	1
Questionnaires	0	0	0	1	0
Total	100	99	100	100	100

Although research reports represent a little more than a fourth (28%) of the total sample, there is a wide difference between topics, with attitudes (39%) and employment (40%) both containing significantly higher, and curriculum (12%) significantly lower, percentages of research reports.[28] Project descriptions is the next largest category (18% overall), with significantly larger portions of the counseling sample (26%) and smaller portions of the attitude sample (6%) in the publication category. Speeches, mainly presentations at professional meetings, represent one-eighth (12%) of the overall sample, but are a substantially (and significantly) larger portion of the attitude sample (18%). While curriculum materials constitute nearly a third (30%) of the documents on curriculum topics, they represent only two to four percent of the samples for the other three topics. Books are a substantial part of the attitude sample (17%), but a very small part of the curriculum sample (2%). Twice as many guides (12%) appear in the counseling sample as in any of the other three samples. Differences among the four topics are not significant for any of the remaining publication types.

Topics also differ in sponsorship as indicated in Table 27.

TABLE 27

PERCENTAGE OF RIE DOCUMENTS BY TYPE OF SPONSOR FOR EACH OF FOUR TOPICS
($X^2 = 42.13$; $P<.002$)

	ATTITUDES N=125	EMPLOYMENT N=125	COUNSELING N=125	CURRICULUM N=125	TOTAL N=500
Federal	34	52	47	38	43
State/local ed. agency	7	5	10	19	10
Publishers	11	9	7	2	7
Foundations	4	2	2	2	3
Other state agencies	4	2	2	1	2
Other sponsors	2	6	3	5	4
No sponsor identified	38	24	28	33	31
Total	100	100	99	100	100

[28]When significant differences are noted, they are based on inspection of the adjusted residuals for cells in the chi square tests of independence between the two categorical variables. They are thus tests of differences between the actual frequencies and the expected frequencies computed from the marginal (total) frequencies, rather than tests of percentages between two particular samples.

Federal agencies, by far the largest type (43% overall), sponsor significantly more of the employment sample (52%), but significantly less of the attitude sample (34%). State and local education agencies, representing ten percent overall, are heavily represented in the curriculum sample (19%) but lightly represented in the employment sample (5%). Publishers represent seven percent overall, but they are a significantly minor sponsor for the curriculum sample (2%). Foundations, other state agencies, and other sponsors each contribute two to four percent of the overall sample and one to six percent for the samples for the four topics. There are no significant differences among the four topics for any of these sponsor categories (see footnote 28). Approximately a third (31% overall) of the documents could not be classified as to type of sponsor. The percentage (38%) of unclassifiable documents is significantly higher for the attitude topic sample.

Performer types also vary significantly across the four topical areas as indicated in Table 28.

TABLE 28

PERCENTAGE OF RIE DOCUMENTS BY TYPE OF PERFORMER FOR EACH OF FOUR TOPICS
($X^2 = 77.51$; $P<.0001$)

	ATTITUDES N=125	EMPLOYMENT N=125	COUNSELING N=125	CURRICULUM N=125	TOTAL N=500
Universities	57	34	38	38	41
Local agencies	6	6	22	23	14
Non-profit/ for-profit agencies	8	18	11	18	14
State agencies	3	8	7	12	8
Publishers	11	7	7	2	7
Associations and commissions	6	10	8	3	7
Federal agencies	3	14	6	2	6
Foundations	1	2	1	1	1
Not classifiable	4	2	0	2	2
Total	99	101	100	101	100

A remarkably large portion (57%) of the attitude literature is produced by authors affiliated with universities. There are marked contrasts in the contributions of local agency authors who contribute significantly more to the counseling and curriculum samples but significantly less to the attitude and employment samples. Non-profit/for-profit authors contribute significantly less to the attitude samples. State agency authors provide significantly more than the expected amount of documents in the curriculum sample, but significantly less to the attitude sample. Exactly the reverse is true for publishers. Federal agency authors are especially high contributors to the employment literature. There are no significant departures from the average for any of the other performer types (associations and commissions, foundations, not classifiable).

Page length results were presented earlier (see Table 16 and accompanying text). There are no significant variations by topic in copy availability, but there are significant differences for authorship. Table 29 displays the percentages. Three significant discrepancies are found: 1) individual authors are predominant in the attitude samples (91% vs. 9% anonymous); 2) the male to female author ratio is significantly higher than expected in the employment samples (54% male to 21% female); but 3) it is lower than expected in the curriculum sample (39% to 39%).

TABLE 29

PERCENTAGE OF RIE DOCUMENTS BY AUTHORSHIP FOR EACH OF FOUR TOPICS
(Male-Female X^2 =10.91; P<.02: Indiv.-Anon. Author X^2 = 13.74; P<.005)

	ATTITUDES N=125	EMPLOYMENT N=125	COUNSELING N=125	CURRICULUM N=125	TOTAL N=500
Male First Author	58	54	46	39	49.4
Female First Author	33	21	29	39	30.4
Male and Female First Author	91	75	75	78	79.8
Anonymous Author	9	25	25	22	20.2
Total	100	100	100	100	100

Finally, the four topics also differ in the number of equity groups, as shown in Table 30.

TABLE 30

PERCENTAGE OF RIE DOCUMENTS BY NUMBER OF EQUITY GROUPS FOR EACH OF FOUR TOPICS
($X^2 = 17.02$; $P<.01$)

	ATTITUDES N=125	EMPLOYMENT N=125	COUNSELING N=125	CURRICULUM N=125	TOTAL N=500
Only one group	50	42	50	63	51
Two or three groups	38	50	38	26	38
More than three groups	12	8	11	11	11
Total	100	100	99	100	100

Significantly less of the employment samples focus exclusively on one group, while significantly more of the employment sample deals with two or three equity groups. The converse hold in the curriculum samples where significantly more of the documents are focused on one group while significantly less are focused on two or three groups.

3. Publication dates. We have already noted that there are significant differences among the five equity groups in the average publication date of their RIE samples, but that there are no differences for the four topics. Table 25 indicates that there are also no differences over publication periods in page length or in the proportion of anonymous authors. However, there are significant differences in the remaining variables, thus confirming the Paisley, et al. suggestion that time trends might be an important third dimension. In the following tables RIE documents have been classified into three "semi-decades" of publication (before 1970; 1970-1974; 1975-1979), and then cross tabulated with each qualtitative variable. Since the chi square tests for all tables are highly significant, commentary will again focus on cells that display significant discrepancies (adjusted residuals greater than 1.96; $P<.05$). The significant differences found in Table 31 involve only three of the publication types: project descriptions, speeches, and books. Project descriptions consitute significantly less (8%) of the recent publications, but significantly more (26%) of the 1970-74 publications than the average (18%) over the three publication periods. While speeches (principally presentations at scientific meetings) constitute significantly less (6%) of the RIE literature in the early period, they constitute significantly more (19%) of the sample in the most recent period. Finally, books are a significantly small (4%) part of the 1970-74 publications. We know,

TABLE 31

PERCENTAGE OF RIE DOCUMENTS BY PUBLICATION TYPES
WITH THREE SEMI-DECADES FOR PUBLICATION DATE
(X^2 = 46.34; P = .0002)

	BEFORE 1970	1970-1974	1975-1979	Total
	N=147	N=168	N=185	N=500
Research reports	25%	29%	31%	28%
Project descriptions	23	26	8	18
Speeches	6	11	19	12
Curriculum materials	7	11	9	9
Books	12	4	11	9
Guides	8	5	8	7
Proceedings	7	5	3	5
Bibliographies, reviews	3	4	6	5
Other publication types	7	6	5	6
Total	98	101	100	99

that in the case of speeches, there has been a concerted effort to access presentations at the Annual Meetings of the American Educational Research Association. Apparently, there have been fewer project reports in recent years. We suspect that the drop in book accessions in the 1970-74 period may reflect changes in ERIC RIE book accession policy.

Sponsorship also displays some significant changes over publication periods that are presented in Table 32. First, the proportion of documents with federal sponsorship is significantly higher in the last semi-decade, while the percentage of publisher sponsored documents has dropped after the first period (before 1970). Sponsorship by other (than educational) state agencies was higher in the 1970-74 period, and other sponsor types have increased slightly after the earliest period. The major consistent changes over time have been away from accessing publishers' books, and toward accessing documents sponsored by federal agencies and "other" types of sponsors.

TABLE 32

PERCENTAGE OF RIE SPONSORSHIP TYPES
WITHIN THREE SEMI-DECADES OF PUBLICATION DATE
(X^2 = 38.00; P = .0003)

	BEFORE 1970	1970-1974	1975-1979	Total
	N=147	N=168	N=185	N=500
Federal agencies	39%	40%	49%	43%
State/local education agencies	11	10	10	10
Publishers	16	4	3	7
Foundations	4	1	3	3
Other state agencies	1	4	1	2
Other sponsor types	1	5	5	4
No sponsor identified	29	36	28	31
Total	101	100	99	100

The time trends for performer types are displayed in Table 33. The significant discrepancies in this table indicate that university performers contributed substantially less to the earliest semi-decade, while publishers were (as both sponsors and performers) high contributors in this early period, as were commissions and councils. Non-profit/for-profit agencies are significantly less well represented in the mid semi-decade (1970-74), while federal agencies show significantly higher percentages in the most recent semi-decade.

TABLE 33

PERCENTAGE OF RIE PERFORMER TYPES
WITHIN THREE SEMI-DECADES OF PUBLICATION DATE
(X^2 = 55.36; P = .0001)*

	BEFORE 1970	1970-1974	1975-1979	Total
	N=147	N=168	N=185	N=500
Universities	29%	47%	46%	41%
Local agencies	18	15	10	14
Non-profit/for-profit agencies	14	10	17	14
State agencies	9	10	5	8
Publishers	16	4	3	7
Federal agencies	3	5	9	6
Commissions/councils	7	4	2	4
Associations	1	3	4	3
Foundations	1	1	2	1
Not classifiable	1	2	2	2
Total	99	101	100	100

*Foundations and not classifiable rows were not included in chi square test due to low cell frequencies.

Table 34 shows: (a) that both microfiche and hardcopy copy availability have improved significantly after the first semi-decade (partially due to decrease in the proportion of publishers' books); (b) there has been a significant decrease in the percentage of publications focused exclusively on one equity group in the most recent period as contrasted to the 1970-74 era; and (c) there has been a substantial and continued shift in the percentage of male/female first authors, with female authors moving from 25% to 47% in the individually authored RIE documents over this period.[29]

TABLE 34

PERCENTAGES FOR: (a) COPY AVAILABILITY (b) NUMBER OF EQUITY GROUPS IDENTIFIED AND (c) MALE/FEMALE AUTHORSHIP WITHIN THREE SEMI-DECADES OF PUBLICATION DATE

	BEFORE 1970	1970-1974	1975-1979	Total
	N=147	N=168	N=185	N=500
a. Copy Availability				
Microfiche copy available	74%	95%	90%	87%
Hard copy available	69%	88%	74%	77%
b. Number of Equity Groups Identified				
Only one group	52%	59%	44%	51%
Two or three groups	39	33	42	38
More than three groups	9	8	14	11
c. Male/Female Authorship	N=118	N=128	N=153	N=399
Male first author	75%	61%	53%	62%
Female first author	25	39	47	38

[29]This trend is also evident when first and second authors are considered. Papers authored solely by female authors represent 18, 26, and 36 percent of the individually authored papers in the three periods. Papers in which a female was listed as either first or second, represent 24, 33, and 44 percent of the individually authored papers in the three periods. For other data bearing on real or apparent increases over time in female authorship of educational documents see Scheuneman (1979) and Lockwood and Stein (1980).

4. Publication type. Among all the variables considered in this RIE document analysis, publication type is undoubtedly the major variable in terms of the number of significant relationships with other variables. We have already noted that publication type varies over equity groups, topics, and publication periods. It is also significantly associated with type of sponsor, type of performer, page length, copy availability, authorship, and number of groups identified. Given these findings, it seems imperative that publication type be identified or controlled in subsequent studies of the RIE data base.

TABLE 35

CROSS TABULATION OF RIE PUBLICATION CODE CLASSIFICATIONS WITH SPONSOR CLASSIFICATIONS
(X^2 = 225.42; P <.0001)

		RESEARCH REPORTS	PROJECT DESCRIP-TIONS	SPEECHES & PROCEED-INGS	CURRICU-LUM & GUIDES	BOOKS & MONO-GRAPHS	OTHER PUB. TYPES	Total
No Sponsor Identified	A	36	24	45	17	7	25	154
	E	43.7	28.0	27.1	24.9	14.2	16.0	(31%)
	AR	-1.7	-1.0	+4.6***	-2.1**	-2.4**	+2.8**	
Federal	A	77	56	21	33	12	15	214
	E	60.8	38.9	37.7	34.7	19.7	22.3	(43%)
	AR	+3.2**	+4.0***	-4.0***	-0.4	-2.4**	-2.1**	
State/Local Education Agencies	A	10	6	10	18	0	7	51
	E	14.5	9.3	9.0	8.3	4.7	5.3	(10%)
	AR	-1.5	-1.3	+0.4	+3.9***	-2.4**	+0.8	
Foundations, Other State & Other Sponsors	A	17	4	12	5	3	4	45
	E	12.8	8.2	7.9	7.3	4.1	4.7	(9%)
	AR	+1.5	-1.7	+1.7	-1.0	-0.6	-0.3	
Publishers	A	2	1	0	8	24	1	36
	E	10.2	6.6	6.3	5.8	3.3	3.7	(7%)
	AR	-3.2**	-2.5**	-2.9**	+1.0	+12.4***	-1.6	
Total		142 (28%)	91 (18%)	88 (18%)	81 (16%)	46 (9%)	52 (10%)	500

Table 35 displays the actual frequencies (A), expected frequencies (E), and adjusted residuals (AR) for the cross tabulation of publication type by sponsor type. Note that some similar classifications have been combined before cross tabulation to avoid very small expected cell frequencies.

Proceeding row-wise, with brief commentary on cells displaying statistically significant adjusted residuals, we first note that, among the 154 documents (31%) where no sponsorship is identified, there are four significant discrepancies between actual and expected frequencies: speeches & proceedings, and "other" publication types (combines bibliographies, theses, journal articles, directories, and questionnaires) both tend to have higher actual than expected numbers of documents with unidentified sponsorship, while the converse is true for curriculum materials & guides, and for books & monographs. Federal sponsorship is higher than expected for research reports and project descriptions, but less than expected for speeches & proceedings, books & monographs, and "other" types of publications. State and local education agencies sponsor significantly higher than expected numbers of curriculum materials & guides, but lower than expected numbers of books & monographs. Publishers produce two-thirds of all the books & monographs, but are rarely sponsors for other forms of publication. The residual class of foundations, other state & other types of sponsors displays no significant cell discrepancies, perhaps because it is a miscellaneous category.

Table 36 displays the cross tabulation of publication type by performer type. In this cross tabulation, the same (combined) publication classifications were used as those in Table 35. With respect to performer types, associations and commissions were combined, but 6 documents authored by foundations and 10 "not classifiable" documents were deleted before cross tabulation to avoid low cell frequencies. Hence, only 484 RIE documents are represented in this cross classification. Again, proceeding row-wise, we first note that the major performer type, universities, displays a number of significant discrepancies between actual and expected frequencies, with higher than expected frequencies for speeches & proceedings and "other" publication types, but lower than expected frequencies for curriculum materials & guides, and for books & monographs. Non-profit/for-profit agencies tend to produce expected amounts of all types of publications. Associations & commissions also tend to produce near expected numbers of documents for all publication types except project descriptions, where the actual number is significantly less than expected. Local agencies, on the other hand, produce significantly more than the expected number of project descriptions, but significantly less than the expected number of books & monographs, research reports, and "other" types of publications. State agencies produce significantly fewer research reports, but more curriculum materials & guides. Considered as performers, publishers produce more books & monographs, but fewer than expected numbers of research reports, project descriptions, and speeches & proceedings (no surprises here). Finally, federal agencies, as performers, produce significantly larger than expected numbers of research reports, but fewer than expected numbers of curriculum materials & guides.

TABLE 36

CROSS CLASSIFICATION OF PUBLICATION CODE CLASSIFICATION
BY PERFORMER TYPE CLASSIFICATION
($X^2 = 272.75$; $P<.0001$)

		RESEARCH REPORTS	PROJECT DESCRIP-TIONS	SPEECHES & PROCEED-INGS	CURRICU-LUM & GUIDES	BOOKS & MONO-GRAPHS	OTHER PUB. TYPES	Total
Universities	A	65	29	55	21	8	29	207
	E	59.4	37.6	37.2	33.4	18.0	21.4	(43%)
	AR	+1.1	-2.1**	+4.3***	-3.1**	-3.2**	+2.3**	
Non-profit/ For-Profit Agencies	A	25	9	8	15	6	6	69
	E	19.8	12.5	12.4	11.1	6.0	7.1	(14%)
	AR	+1.5	-1.2	-1.5	+1.4	0.0	-0.5	
Associations & Commissions	A	14	1	6	6	3	4	34
	E	9.8	6.2	6.1	5.5	3.0	3.5	(7%)
	AR	+1.7	-2.4**	-0.1	+0.3	0.0	+0.3	
Local Agencies	A	9	37	8	15	0	2	71
	E	20.4	12.9	12.8	11.4	6.2	7.3	(15%)
	AR	-3.2**	+8.0***	-1.6	+1.2	-2.8**	-2.3**	
State Agencies	A	5	9	5	12	1	6	38
	E	10.9	6.9	6.8	6.1	3.3	3.9	(8%)
	AR	-2.2**	+0.9	-0.8	+2.7**	-1.4	+1.2	
Publishers	A	2	1	0	8	22	1	34
	E	9.8	6.2	6.1	5.5	3.0	3.5	(7%)
	AR	-3.1**	-2.4**	-2.8**	+1.2	+12.0***	-1.5	
Federal Agencies	A	19	2	5	1	2	2	31
	E	8.9	5.6	5.6	5.0	2.7	3.2	(6%)
	AR	+4.1***	-1.8	-0.3	-2.0**	-0.5	-0.7	
Total		139 (29%)	42 (9%)	88 (18%)	78 (16%)	87 (18%)	50 (10%)	484

Publication type is significantly related to microfiche (MF) and hard copy (HC) availability (as indicated in the column labelled "% MF Avail." and "% HC Avail." in Table 37). (Please note that percentage availability shown in the total row are based on all 500 documents.) The availability of books and monographs (26% in MF; 15% in HC) and guides (59% in MF; 50% in HC) are both significantly below the overall averages (87% for MF; and 77% for HC). Note that 94 to 100 percent of the documents are available in microfiche for seven of the publication types.

TABLE 37

COPY AVAILABILITY BY TYPE OF PUBLICATION

Publication Type	% MF Avail.	% HC Avail.
Books & monographs	26%	15%
Theses	100	100
Proceedings	96	96
Curriculum materials	94	83
Guides	59	50
Project descriptions	95	86
Research reports	95	85
Bibliographies, reviews	100	83
Journals, serials	86	57
Speeches	98	92
Total	87	77

TABLE 38

PERCENTAGES WITHIN PUBLICATION CODE CLASSIFICATION FOR
(a) TYPES OF AUTHORSHIP AND (b) NUMBERS OF EQUITY GROUPS IDENTIFIED
(Indiv.-Anon. Author X^2 = 66.48; P<.0001: Male-Female X^2 = 19.00; P<.02:
Number of Equity Groups X = 24.43; P<.005)

	Authorship			Number of Equity Groups Identified		Number of Documents
	N=101 Anon.	N=247 Male	N=152 Female	N=256 One	N=244 >1	N=
Research reports	18	53	29	49	51	142
Books & monographs	4	63	33	37	63	46
Project descriptions	32	47	21	51	49	91
Guides	15	59	26	62	38	34
Speeches	0	65	35	55	45	62
Curriculum materials	28	23	49	74	26	47
Bibliographies, reviews	39	26	35	26	74	23
Proceedings	58	19	23	38	62	26
Theses	0	63	37	63	37	19
Journal articles, serials	14	57	29	57	43	7
Directories	100	0	0	50	50	2
Questionnaires	0	100	0	0	100	1
Total	20.2	49.4	30.4	51.2	48.8	500

Table 38 presents percentages within each publication type for authorship, and for number of equity groups identified. Focusing first on the comparison of anonymous authors to identified authors (male and female combined), we note that there are significantly larger than expected percentages of anonymous authorship for: project descriptions, bibliographical reviews, and proceedings; while there are significantly lower than expected percentages for: books & monographs, speeches, and theses. (Data for journals, directories, and questionnaires are included in Table 38, but were not included in chi square tests because of low frequencies). When we compare only the male to female (first author) percentages, we note that, overall, males are first authors of about 60 percent (61.9%) and females 40 percent (38.1%) of the 399 documents where an individual author is identified, while in three cases, female percentages exceed male percentages. Curriculum materials is the only publication type displaying a statistically significant discrepancy from this overall proportion. In this instance, only 32 percent of individually authored curriculum material have male first authors.

Turning now to the number of equity groups identified in RIE documents, our comparison is made between the percentage of documents within each publication type that dealt exclusively with one equity group, or dealt with more than one group. Overall, roughly half of the documents (51.2%) focus primarily on one equity group, while the remainder (48.4%) deal with more than one equity group. There are three statistically significant departures from these overall proportions; books & monographs and bibliographies & reviews have much higher percentages of documents dealing with more than one group, while curriculum materials have a significantly lower percentage of multiple group treatments. (Chi square is based on first ten publication types.)

5. Sponsor type. We have previously noted that sponsor type is significantly associated with type of equity group, topic, publication date, and publication type. In this subsection, we shall look at three of the remaining significant relationships with: performer type, copy availability, and anonymous authorship. Note that the only variables which are independent of sponsor type (no differences across sponsor types) are sex of author and number of equity groups identified. Page length for sponsor type will be examined in a later section.

Table 39 displays the cross tabulation of sponsor and performer types. Note that several classifications for both variables have been omitted in order to provide a better test for independence. First, all 34 publisher "performer" counts are associated with the publisher "sponsor" classification (N=36). Second, all 31 federal "performer" counts are associated with the federal "sponsor" classification (N=214). Third, five of the six foundation "performer" counts are associated with the foundation "sponsor" classification (N=14). Eight of the ten "not classifiable by performer" counts are associated with the "not classifiable by sponsor" classification (N=154). Each of these performer classifications were omitted because they were obviously associated primarily with one sponsor type. The publisher sponsor classification was then omitted because it contributed only two counts to the remaining table. Finally, the state (non-educational) agency sponsor classification was omitted because the 11 state agency sponsored documents were produced either by the state agency itself (N=3) or by universities (N=8). The consequence of these omissions is a more conservative test of association between sponsor and performer types. Also, as noted in Table 37, the association and council/commission performer classifications, and the foundations and "other" sponsor classifications were combined to avoid small expected cell frequencies.

Despite these omissions, 408 documents (82% of the sample) are represented in this cross tabulation, which displays a highly significant rejection of the chi square test for independence. The significant adjusted residuals (AR) flag the cells where there are significant discrepancies between actual (A) and expected (E) frequencies.

Inspected row-wise, we can ask where different performers secure their sponsorship. We see that about half of the 199 documents produced by university based authors provide no sponsorship identification. This

is significantly more than expected. Conversely, significantly fewer than the expected number of university produced documents are sponsored by state and local educational agencies. The universities' shares of federal and of foundation & "other" sponsor types are close to the expected values.

Exactly two-thirds of all non-profit/for-profit agency produced documents are federally sponsored. This number (46) is significantly larger than the expected number (30.8). This performer type also produces more than the expected number of foundation & "other" sponsored documents, but conversely fewer than the expected number of state/local educational agency sponsored and "no sponsor" documents.

TABLE 39

CROSS TABULATION OF RIE SPONSOR AND PERFORMER CLASSIFICATIONS
(X^2 = 148.11; P <.0001)

PERFORMER TYPE		SPONSOR TYPES				
		NO SPONSOR	FEDERAL AGENCIES	STATE/LOCAL EDUCATIONAL AGENCIES	FOUNDATIONS & OTHERS	TOTAL
UNIVERSITIES	A	101	79	8	11	199
	E	71.2	88.8	24.4	14.6	(49%)
	AR	+6.2***	-1.9	-4.9***	-1.4	
NON-PROFIT/ FOR-PROFIT AGENCIES	A	11	46	3	9	69
	E	24.7	30.8	8.5	5.1	(17%)
	AR	-3.8***	+4.0***	-2.1**	+2.0**	
ASSOCIATIONS/ COMMISSIONS & COUNCILS	A	10	14	2	8	34
	E	12.2	15.2	4.2	2.5	(8%)
	AR	-0.8	-0.4	-1.2	+3.8***	
LOCAL AGENCIES	A	23	31	16	1	71
	E	25.4	31.7	8.7	5.2	(17%)
	AR	-0.7	-0.2	+2.9**	-2.1**	
STATE AGENCIES	A	1	12	21	1	35
	E	12.5	15.6	4.3	2.6	(9%)
	AR	-4.3***	-1.3	+9.0***	-1.1	
TOTAL		146 (36%)	182 (45%)	50 (12%)	30 (7%)	408

Associations/commissions & councils produce a larger than expected number of documents sponsored by foundations & "other" sponsors, but near the expected numbers for the remaining sponsor classifications.

Local agencies produce more than the expected number of documents that are sponsored by state agencies or by their own local agencies, while they rarely perform work sponsored by foundations or "other" sponsors. Their "no sponsor" and federal sponsor frequencies are quite near the expected frequencies.

Finally, state agencies are distinguished in two ways: most of their work is sponsored by their own agency and they rarely fail to identify the sponsor of their work.

Page length data for sponsor types will be presented in a later section.

Table 40 displays data for the remaining two significant content variables: copy availability and anonymous authorship. The first thing that we note in Table 40 is that publishers rarely make their documents available, and they never publish anonymously. After removing this highly discrepant sponsor classsification, and combining the last three sponsor classes listed in the table (they are similar in copy availability and anonymous author percentages), a chi square test indicates that foundations are discrepant, with significantly lower than expected copy availability, while the "no sponsor" category displays significantly lower than the expected number of documents with anonymous authorship.

TABLE 40

PERCENTAGE OF MICROFICHE (MF) AND HARD COPY (HC) AVAILABLE, AND PERCENTAGE OF ANONYMOUS AUTHORSHIP FOR RIE DOCUMENTS BY SPONSOR CLASSIFICATIONS

SPONSOR TYPE	N. of Doc.	% MF Avail.	% HC Avail.	% Anon. Author.
Publishers	36	8%	8%	0%
No Sponsor	154	90	81	10
Federal Agencies	214	95	83	28
Foundations	14	64	57	29
[Combined]	[82]	[98]	[89]	[27]
• State/local ed. agencies	51	96	88	29
• Other state agencies	11	100	100	18
• "Other" sponsors	20	100	85	25
Total	500	87	77	20

6. Performer types. Performer types exactly mirror sponsor types in their significant associations. Most of these have been presented. Page averages for performer types will be examined in a later section. Here we examine the two remaining significant relationships: copy availability and anonymous authorship. Table 41 presents these data. The publisher data are nearly the same as those presented in Table 40 since almost the same set of RIE documents were classified as "publisher" for both sponsor and performer. In this classification, when publishers and the two very low frequency types at the bottom of Table 41 are omitted (foundations and not classified--they were not combined because of the substantial differences in MF and HC percentages), chi square tests are insignificant for both MF and HC availability. In other words, there are no significant differences in copy availability for different performer types when the highly discrepant effect of publishers and foundations are removed.

TABLE 41

PERCENTAGE OF MICROFICHE (MF) AND HARD COPY (HC) AVAILABLE, AND PERCENTAGE OF ANONYMOUS AUTHORSHIP FOR RIE DOCUMENTS BY PERFORMER CLASSIFICATIONS

PERFORMER AGENCY TYPE	N. of Doc.	% MF Avail.	% HC Avail.	% Anon. Author.
Publishers	34	9%	9%	0%
Universities	207	94	85	9
Non-profit/for-profit	69	88	77	26
Associations & councils, comm.	34	88	74	50
Local agencies	71	96	89	27
State agencies	38	95	92	42
Federal agencies	31	100	77	32
Foundations	6	50	33	17
Not classified	10	80	60	10
Total	500	87	77	20

Inspection of the percentages for anonymous authorship again shows publishers as highly discrepant, but there are several other major departures from the overall percentage (20%). A chi square test over the first seven performer classifications indicates that publishers and university performers produced significantly fewer RIE documents with anonymous authorship, while associations & councils, commissions (primarily due to the councils and commissions), and the state agencies produced significantly more than the expected number of anonymously authored documents.

7. Copy availability. We have previously noted that copy availability is significantly associated with publication date, type of publication, sponsorship, and type of performing agency. Page length will be discussed in the next section. The remaining significant

association is with anonymous authorship. Stated briefly, 98 percent of all anonymously authored documents are available in microfiche form, while 84 percent of the identified author documents are available in micro-form. This difference is due largely to the fact that agencies tend to produce anonymously authored documents (e.g., state agencies and commissions) and almost always provide microfiche copy releases. Hard copy release is another matter. Here only 85 percent is available for anonymous documents compared to 78 percent for identified author documents. This is not a significant difference.

8. Authorship. Aside from the association with page length to be discussed next, all significant relationships involving this variable have been presented.

9. Page length. In this section, we shall consider the matter of page length for different content classes. Table 25 (p. 62) indicates that average page lengths differ significantly when (one-way analysis of variance) tests are run over classes for nearly all of the variables.

It should come as no surprise that there are major differences in the average page length of the various types of publications. Table 42 displays the average page length ordered from highest to lowest; along with the number of documents on which the average is based. Since there were only two directories and one questionnaire, averages are not reported for these publication types. In sixteen other cases, principally books, no page lengths were reported. Books and monographs average more than two hundred pages, while speeches average about twenty-two pages. The other publication types are arrayed between these two extremes. The books and monographs page average (207.8 pp.) is significantly larger than the average for proceedings (149.2 pp.), which, in turn, is significantly larger than research reports (92.3 pp.), which, in turn, is significantly larger than speeches (21.8 pp.).

TABLE 42

AVERAGE PAGE LENGTH BY TYPE OF PUBLICATION

Publication Type	N	Average Pages
Books & monographs	38	207.8
Theses	19	175.5
Proceedings	26	149.2
Curriculum materials	47	121.9
Guides	31	118.5
Project descriptions	90	116.6
Research reports	140	92.3
Bibliographies, reviews	23	86.3
Journals, serials	6	28.2
Speeches	61	21.8
Total	481	106.9

Because publication type differences may be the chief reasons for many of the one-way analysis of variance differences, two-way, unweighted means, analysis of variance tests were run to see if the differences would exist when variance due to publication type is removed. Table 43 summarizes the results of the one-way and two-way analysis of variance tests.

For equity groups, there are no significant differences in page length for either type of test. For topics, the significant main effect found in the one-way test is still signficant, albeit at a lower level, when the effect of publication type is considered. For publication periods, there is a significant main effect in the one-way analysis; however, in the two-way analysis, there is a significant interaction effect between publication period and publication type. The highly significant main effects for sponsor type and for performer type, found in the one-way analyses, disappear when publication type is considered. These particular results mean that the average of page length for <u>each</u> type of publication do not differ significantly over sponsor types or over performer types. The reasons for the significant main effects found in the one-way analyses are thus due primarily to differences in the proportions of types of publication among sponsor types (see Table 32) and among performer types (see Table 33). The highly significant main effect for hard copy availability, found in the one-way analysis, persists in the two-way analysis, which shows that average page length is consistently greater in all six publication types where there are many unavailable hard copy documents. The significant author effect found in the one-way

TABLE 43

SUMMARY OF ONE-WAY AND TWO-WAY ANALYSIS OF VARIANCE TESTS FOR PAGE LENGTH

CONTENT ANALYSIS CATEGORY	ONE-WAY	TWO-WAY (UNWEIGHTED MEANS)	
		MAIN	INTERACTION
EQUITY GROUPS	NS	NS	NS
TOPICS	**	*	NS
PUB. PERIOD	*	-	***
SPONSOR	***	NS	NS
PERFORMER	***	NS	NS
MF AVAILABLE	***	***	NS
AUTHOR	*	-	*
NR. GPS. ID.	NS	NS	NS

analysis, appears in the two-way analysis as an interaction effect. Finally, the absence of a main effect for members of equity groups is again noted in the two-way analysis.

The page length data for variables displaying the significant effects just reviewed will now be examined.

Topics. The weighted (by proportion of documents for each publication type), unweighted and reweighted paper length means for the four topics are displayed in Table 44. Note that the unweighted means data are the results that would be obtained if all nine publication types were equally represented in each and every topic sample.

A more realistic comparison is provided by the reweighted means, which are the results that would be obtained if the proportion of each publication type corresponded to the percentages by publication type reported for the total sample of 500 documents in Table 19 (p. 55). The weighted means are, of course, the actual page averages for each topic for all RIE documents classified by any of the nine publication types listed in the table.[30]

The F-tests of differences among means in all three sets are significant. Focusing on the more realistic data for weighted means and reweighted means, we note that the page averages for the attitude sample are significantly smaller than those for the employment sample ($P<.01$), but there are no other significant differences. The topic difference is thus primarily attributable to the difference between the much shorter length of RIE documents dealing with attitude topics and the much longer page length of RIE documents dealing with employment topics.

Publication period. The weighted page length means for the three semi-decades are 125.0, 89.2, and 113.0 pages. The corresponding reweighted means are 119.8, 90.0, and 120.5. F-tests for both sets of means are significant at the $P<.05$ level. However, the two-way analysis of variance indicates a highly significant ($P=.0002$) interaction between semi-decade of publication and publication type. Inspection of means for individual types of publications indicates that three types, curriculum materials, proceedings, and reports display significant differences in which the page length of publications of that type are much greater in the most recent semi-decade as compared to the 1970-74 period.

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[30]Three other types of publications. journal articles, directories, and questionnaires, are not included because their numbers are too few to provide page estimates for all four topics. Together they represent only 2 percent of the 500 documents in the total sample. Note that theses have been included in Table 44. Theses, included in "other types" in Table 19, represents 3.8 percent of the sample 500 documents. The reweighted means are thus based only on the nine publication classifications listed in Table 44. The weights are based on the percentages reported in Table 19 and the 3.8 percent for theses.

TABLE 44

WEIGHTED, REWEIGHTED, AND UNWEIGHTED MEANS FOR PAGE LENGTH FOR FOUR TOPICS

	ATTITUDES		EMPLOYMENT		COUNSELING		CURRICULUM		TOTAL*	
	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N
WEIGHTED MEANS	83.0	119	133.5	119	104.6	119	110.4	118	107.9	475
REWEIGHTED MEANS	88.2	-	130.6	-	112.4	-	107.3	-	109.6	-
UNWEIGHTED MEANS	95.0	-	152.2	-	116.2	-	120.9	-	121.1	-
MEANS BY PUBLICATION CODE										
1. BOOKS	163.5	17	216.3	13	286.8	5	289.7	3	239.1	-
2. CURRIC. MATERIALS	42.5	2	125.3	3	121.0	5	126.1	37	103.7	-
3. GUIDES	119.0	6	133.5	4	136.9	15	62.0	6	112.9	-
4. PROJECTS	138.8	8	109.8	23	117.3	33	114.8	26	120.2	-
5. BIBLIOGRAPHIES	31.0	3	120.2	5	93.9	7	79.2	8	81.1	-
6. PROCEEDINGS	123.2	5	264.1	7	84.1	9	131.2	5	150.7	-
7. REPORTS	61.9	49	126.2	49	96.4	27	73.1	15	89.4	-
8. SPEECHES	23.3	23	20.0	12	17.9	16	26.7	10	22.0	-
9. THESES	151.7	6	254.0	3	91.0	2	185.0	8	170.4	-

*The reweighted and unweighted means rows and means for each publication code type in the total column are unweighted means (i.e., simple averages of the other means in each row).

The means are as follows: curriculum materials, 160 vs. 94 pp.; proceedings, 330 vs. 70 pp.; and reports, 101 vs. 60 pp. In the case of reports, the mean page length for the pre-1970 period also significantly exceeds the 1970-74 period, 123 vs. 60 pp.

Sponsor types. As noted previously, the two-way unweighted means analysis of variance shows no significant differences among sponsor types. However, this analysis makes the rather unrealistic assumption that all types of publications would be equally represented in samples and populations. The weighted and reweighted means analysis presents different findings. Table 45 displays the weighted and reweighted page means by sponsor types. Again, the weighted means are the actual values found in the sample of RIE documents. The reweighted means are hypothetical values computed by weighting (multiplying) each sponsor/publication type mean by the proportion of the publication type in the total sample, summing over the weighted means for each type of sponsor, and then dividing by the sum of the proportions. In this instance, several problems in reweighting computation occur. First, we note that very few theses are identified as to sponsorship, so we excluded the thesis publication type from the reweighting computations, since there were few means involving theses. Second, it became necessary to "plug" a dozen empty sponsor-publication type cells with publication type means; e.g., publishers produced no bibliographies, so this cell was "plugged" with the overall mean for bibliographies. Neither foundations nor "other" state agencies produced guides, so the mean page length for guides was "plugged" into these cells, etc. Since four of the eight publication type means for publishers and for foundations were "plugged," and three of the eight means for "other" state agencies were "plugged," the means for these sponsor types are quite hypothetical. They are the values that would be found if (a) that type of sponsor published that type of publication, (b) published it in numbers proportionate to those found in the total sample, and (c) produced publications of that type which averaged the same page length as the average of all publications of that type in the sample.

TABLE 45

WEIGHTED AND REWEIGHTED PAGE MEANS FOR SPONSOR TYPES*

Sponsor Type	N	Weighted Mean	Reweighted Mean
Publishers	29	237.2	169.6
Foundations	12	141.7	116.5
Federal agencies	214	117.3	113.5
Other sponsors	20	107.4	93.4
Other state agencies	11	93.5	103.1
State/local ed. agencies	51	91.2	103.8
No sponsor	147	69.2	68.0

*Two-way ANOVA within cells Mean Square = 9826.

If all this were so, then we note that the page average for publishers drops substantially. Tests of differences among means show that the weighted page mean for publishers is significantly greater than the page mean for all other sponsor types, but that there are no other significant differences among the weighted means. When the reweighted means are tested, only the extreme difference between publishers and no sponsor is found to be significant.[31]

Performer types. Table 46 presents the weighted and reweighted means for performer types. Almost exactly the same comments made regarding sponsor types can apply here. Theses were deleted because universities are almost the exclusive performers for this publication type. Twelve of the 72 performer type/publication type cell means were missing and "plugged" with the page mean for the publication type. And again, the significant differences involve the publisher (as performer) category. However, in this instance, both the weighted and reweighted page means for publishers are significantly different from the respective page means for all other types of performers. And again, as in the case for sponsors, there are no other significant differences among the means for other performer types.

TABLE 46

WEIGHTED AND REWEIGHTED PAGE MEANS FOR PERFORMER TYPE*

Sponsor Type	N	Weighted Mean	Reweighted Mean
Publishers	26	249.4	211.3
Associations	11	153.7	80.0
Non-profit/for-profit agencies	67	131.2	124.3
Councils/commissions	19	116.1	102.0
State agencies	37	105.4	99.9
Federal agencies	30	91.4	90.2
Local agencies	70	91.0	89.9
Universities	182	76.1	88.7
Not identified	8	75.0	69.5

*Two-way ANOVA within cells Mean Square = 9940.

[31]Because these are aposteriori tests of mean, the Newman-Keuls procedure was employed with the harmonic mean of the sample sizes (in this case, the number of documents of each sponsor type) used to compute the q statistics, and with the mean square error taken from the within cells mean square from the two-way analysis of variance. Since the harmonic mean is employed, this is an approximate test.

Because publishers appear both as sponsors and performers, they constitute an anomally in both classifications. When we examine the publisher publication type data closely, we find that books and guides are most numerous, but one or two publisher produced research reports and project descriptions are included in the sample. All four types of publications are, in fact, substantially longer than publications of the same type produced by other performers or sponsored by other sponsors. For this reason, even when the means are reweighted, the publisher means are still the largest on the list. However, perhaps the more remarkable points are: 1) when the publisher category is omitted, there are no other significant differences among the means; and 2) when the means are reweighted, the ranges of these non-significant differences are substantially reduced for both the sponsor and the performer types.

Copy availability. In this analysis, we focus on hard copy availability since a larger proportion of hard copy documents are not available. We discovered that some publication types were always available (i.e., bibliographies, theses, speeches). Table 47 presents the data for the six publication types where hard copy is not always available. Note that the page mean is larger for all six publication types for documents not available in hard copy form. The weighted and reweighted means, summed over the six publication types, are more than twice the page length for the "hard copy not available" samples as compared to the samples where hard copy is available.

TABLE 47

SAMPLE SIZES AND PAGE MEANS FOR RIE DOCUMENTS THAT ARE OR ARE NOT AVAILABLE IN HARD COPY

	HC Available		HC Not Available	
	N	Page Mean	N	Page Mean
Publication Type				
Books	12	110.6	26	248.5
Curriculum Materials	44	118.3	3	175.7
Guides	20	78.5	11	191.3
Project Descriptions	86	108.1	4	299.2
Proceedings	25	149.0	1	153.0
Research Reports	135	88.6	5	190.8
Weighted Mean	322	103.1	50	227.9
Reweighted Mean	-	103.7	-	218.9

Authorship. The results here can be summarized briefly as follows. One, guides that are written by women are significantly longer (206 pp.) than those written by men (86 pp.). Two, the page average for the (two) anonymously authored books is much lower (28 pp.) than the average for books with individuals identified as authors (218 pp.). There are no other significant differences.

Number of equity groups. There are no significant differences in page length for this category.

10. Summary of interrelationships among other RIE content analysis variables. Beyond the seven significant relationships involving equity groups described in Section IV F, this section has reviewed thirty-one significant interrelationships among other content analysis variables. Among the four topics (attitudes, employment, counseling, curriculum), there were significant differences in the proportions of types of publications, in sponsors, performers, authorship, number of equity groups identified, and average document page length.

The simple conclusion is that the RIE literature for different topics can be remarkably different in many substantial ways, e.g., in which types of sponsors fund the work, which types of institutions perform the work, in the types and page lengths of the documents that are found, and even in the sex of the authors, and in the breadth of equity groups that are described in the documents.

When the RIE samples are sorted by publication date into three semi-decades, we note that there have been significant changes over time for many of the variables including: types of publications found, types of performers, types of sponsors, availability of copy, sex of authors, and numbers of equity groups identified.

Publication type is the one variable displaying a significant relationship with every other variable employed in the content analysis. Proportions of types of publications vary by topic, publication date, type of sponsor, type of performer, copy availability, authorship, and number of groups identified. There are also significant page length differences among publication types.

Who sponsors and who performs the work are significant variables that interact with each other as well as many other variables including topic, date of publication, publication type, copy availability, institutional (anonymous) authorship, and average page length.

When copy availability is examined, we discover that significantly larger proportions of the RIE literature are available for documents published in the last decade as compared to pre-1970. Although the great proportion of RIE documents are available in microfiche (87%) or hard copy (77%), copy availability does differ significantly by publication type, sponsor type, performer type, anonymous authorship, and page length.

The proportion of anonymously authored documents varies significantly by topic, publication type, sponsor, performer, copy availability, and page length. The proportion of male and female first authors

differs significantly for topics, over time of publication, and by publication type. Significant page length differences by sex were traced to a particular type of publication.

Although the number of groups identified per document was found to vary significantly among the equity groups, this variable displayed only three significant relationships with other variables, namely: topics, publication date, and publication type.

Finally, page length is perhaps most fundamentally associated with type of publication, with average page length ranging from 22 pages for speeches to more than 200 pages for books. However, even when adjustments are made by reweighting publication type means for a specific category by the overall proportions of publications types found in the entire sample, significant page differences among page means are still found among several categories including: topic, sponsor, performer, copy availability, and authorship. Given these many differences in page length, page estimates for the total RIE document literature in particular areas must be made with careful attention to what one really wants to estimate.

Overall, these many significant relationships point to the need for exercising great caution in generalizing from one body of information equity literature to another. One can sample and describe the general character of specific portions of RIE literature in ways that may be informative and useful, but one must be cautious in assuming that what is found for one equity group may be characteristic of literature for other equity groups.

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APPENDIX A

METHODOLOGY

The anlaysis of the ERIC database in the preliminary study focused on the proportion of postings in eight topic areas that pertained to five population groups. Drawing from the THESAURUS OF ERIC DESCRIPTORS (7th ed.), the descriptor terms relevant to each population group were listed, along with the number of RIE (Resources in Education) postings to each term. Within each group, approximately ten terms were selected--the ten with the highest number of postings. Where ten terms did not adequately define the population, additional terms were selected. For example, descriptors such as Chinese Americans were not among those with large numbers of postings. To insure complete representation of all members of the minority group population, such terms were added.

The choice of the substantive content areas was guided by the Descriptor Groups found on page 425 of the THESAURUS. Of the fifty-two Descriptor Groups defined by ERIC, eight were selected. They were chosen as content areas with substantial numbers of documents and articles in the ERIC database. They were chosen also as topics of relevance to the five populations. Selection of the terms used in searching was again guided by the number of RIE postings to each term. Those terms with the highest number of postings were included until addition of further terms did not significantly increase the number of postings for that descriptor group. This led to a range of from five to eleven terms per descriptor group, associated with a range of from 14,210 to 64,818 postings per descriptor group.

The online search strategy was to create a separate set for each population group and each content group consisting of the terms selected for that group. Each set of population group terms was then combined with each set of content terms, using the Boolean "and" operator. Each of the resulting forty sets was comprised of all the citations posted to at least one of the population terms and one of the content terms within the groups being combined. The number of postings in each of the forty cells was used to create a five by eight, populations by content areas, matrix. Row, column, and marginal percentages were computed on the basis of the forty cell postings.

ERIC DESCRIPTOR TERMS FOR FIVE SPECIAL POPULATIONS

EXAMINED IN THE FIRST STUDY

DISABLED	MIGRANT	MINORITY
17 terms	8 terms	15 terms
physically handicapped	migrants	minority groups
retarded children	migrant adult education	American Indians
deaf	migrant education	Blacks
deaf blind	migrant child education	ethnic groups
blind	migrant schools	Mexican Americans
handicapped children	migrant youth	Black students
handicaped students		Puerto Ricans
mentally handicapped		Asian Americans
speech handicapped		Eskimos
language handicapped		bilingual education
multiply handicapped		ethnic studies
severely handicapped		cultural pluralism
aphasia		Chinese Americans
aurally handicapped		Japanese Americans
cerebral palsy		Filipino Americans
visually handicapped		

RURAL	WOMEN
10 terms	13 terms
rural areas	sex differences
agricultural education	working women
rural urban differences	females
rural youth	sex discrimination
rural development	womens education
rural population	mothers
rural extension	feminism
rural schools	sex role
farmers	sex (characteristics)
	womens studies
	women professors
	women teachers
	women athletics

ERIC DESCRIPTOR TERMS FOR EIGHT SUBSTANTIVE AREAS

ABILITIES

8 terms

- ability
- ability grouping
- ability identification
- cognitive ability
- academic ability
- language ability
- skills
- student ability

ADMINISTRATION

6 terms

- administration
- administrative personnel
- administrator role
- administrative organization
- administrative policy
- administrator responsibility

ATTITUDES

7 terms

- attitudes
- administrator attitudes
- student attitudes
- teacher attitude
- counselor attitudes
- school attitudes
- community attitudes

COUNSELING

11 terms

- counseling
- counseling programs
- counseling services
- educational counseling
- occupational guidance
- vocational counseling
- guidance
- counselors
- counselor training
- counseling effectiveness
- career planning

CURRICULUM

5 terms

- curriculum
- curriculum development
- curriculum design
- curriculum guides
- curriculum planning

EMPLOYMENT

8 terms

- employment opportunities
- job training
- personnel evaluation
- unemployment
- employment
- job skills
- labor force
- labor market

INSTRUCTION

6 terms

- instruction
- instructional aids
- instructional design
- instructional materials
- instructional media
- instructional tech.

LEARNING

6 terms

- learning
- learning activities
- learning processes
- learning readiness
- verbal learning
- visual learning

TABLE A1

RESULTS OF THE FIRST STUDY:
DATABASE COVERAGE OF EIGHT EDUCATIONAL TOPICS
WITH REFERENCE TO FIVE GROUPS

	MIGRANTS 8 terms P=1,306	RURAL 10 terms P=7,049	WOMEN 13 terms P=13,719	DISABLED 17 terms P=15,771	MINORITIES 15 terms P=14,763	Total
ABILITY 8 terms P=27,007	.3% 87 7%	1% 352 5%	3% 840 6%	6% 1,621 10%	4% 946 6%	3,846 14.3% of P
LEARNING 6 terms P=34,407	.4% 158 12%	.7% 256 4%	2% 673 5%	6% 2,063 13%	4% 1,328 9%	4,478 13.1% of P
INSTRUCTION 6 terms P=64,818	.3% 218 16%	.1% 636 9%	.9% 555 4%	3% 2,026 13%	3% 2,231 15%	5,666 7.3% of P
CURRICULUM 5 terms P=35,677	.5% 166 13%	2% 676 10%	1% 452 3%	3% 1,025 7%	4% 1,603 11%	3,922 10.5% of P
COUNSELING 11 terms P=15,798	.3% 46 4%	2% 336 5%	6% 950 7%	5% 808 5%	4% 622 4%	2,762 17.3% of P
ATTITUDES 7 terms P=36,650	.4% 155 12%	3% 981 14%	9% 3,207 23%	4% 1,367 9%	8% 2,471 17%	8,181 24.4% of P
ADMINISTRATION 6 terms P=16,330	.3% 49 4%	2% 345 5%	3% 404 3%	4% 649 4%	3% 468 3%	1,870 12.3% of P
EMPLOYMENT 8 terms P=14,210	.9% 134 10%	6% 875 12%	11% 1,513 11%	5% 695 4%	8% 1,059 7%	4,276 30.9% of P
Total	1,013 78% of P	4,457 64% of P	8,594 62% of P	10,254 65% of P	10,728 72% of P	35,001

ERIC DESCRIPTOR TERMS USED IN THE FOLLOW UP STUDY

The terms listed on page A-3 for attitudes, counseling, curriculum, and employment were also used in the follow-up study. The search terms for the five equity groups are listed below.

PHYSICALLY HANDICAPPED	BLACKS	WOMEN
1 term	6 terms	10 terms
physically handicapped	Blacks	sex differences
	Black students	working women
	Black youth	females
	Negroes	sex discrimination
	Negro students	womens education
	Negro youth	mothers
		feminism
		sex role
		sex (characteristics)
		womens studies

MENTALLY HANDICAPPED	HISPANICS
2 terms	2 terms
mentally handicapped	Mexican-American
retarded children	Puerto Rican

RIE CONTENT ANALYSIS CATEGORIES

1. Topics (See search terms p. A-3: Attitudes, Counseling, Curriculum, Employment.)

2. Equity Groups (See search terms p. A-5: Physically handicapped, Mentally handicapped, Blacks, Hispanics, Women.)

3. Publication Semideades (Before 1970, 1970-1974; 1975-1979)

4. Publication Date (last two digits of year of publication)

5. First Author Location (U.S. States and Territories, District of Columbia, Canada, and "Other")

6. First Author (Performer) Institution Type (University or College, Federal Agency, State Agency, Non-profit/for profit Organization, Association, Council or Commission, Publisher, Foundation, No information)

7. Sponsor Type (Federal Agency, Foundation, State or Local Educational Agency, Other State Agency, Publisher, Other (miscellaneous) Sponsor, No information

8. Copy Availability (Microfiche, 1 if available, 0 otherwise; Hardcopy, 1 if available, 0 otherwise)

9. Authorship (Anonymous author, male first author, female first author; one male author, two or more male authors, one male et al., male and female, one female, two or more female, one female et al.)

10. Number of Equity Groups Identified. (Based on examination of entire RIE entry, code 1 if only one group or class is identified, code 2 if two or three different groups or classes are identified, code 3 if more than three groups are identified; count similar terms only once, e.g., Mentally Handicapped, Educably Mentally Handicapped, Trainable Mentally Handicapped would be counted as one group, but if Orthopedically Handicapped also appeared, two groups would be counted.

    The following is a partial listing of terms that were a partial that were noted: Age, American Indians, Anglo Americans, Asian Americans, Aurally Handicapped, Black (noun), Blacks, Canadian Natives, Cerebral Palsey, Chicanos, Deaf, Disadvantaged Youth, Educably Mentally Handicapped, Emotionally Disturbed, Eskimos, Ethnic Groups, Females, Hospitalized Children, Indochinese, Institutionalized (Persons), Japanese, Learning Difficulties, Leprosy, Low Income Groups, Lower Class Parents, Mental Illness, Migrants, Mothers, Negro (noun), Negroes, Neurologically Handicapped, Orthopedically Handicapped, Physically Handicapped,

Puerto Ricans, Racism, Racial Factors, Retarded Children, Sex, Sex (noun), Sexuality, Slow Learners, Socially Maladjusted, Spanish, Speech Handicapped, Social Class, Social Disadvantagement, Socioeconomic Background, Rural (noun), Visually Handicapped, Working Women.

11. Publication Types.

A Audio Visual/Nonprint Media; Audiovisual Aids; Films; Tape Recordings; Phonotape Recordings; Computer Programs; etc.

B Books; Monographs; Textbooks; Programmed Texts; etc. (not otherwise classifiable)

C Curriculum Guides; Curriculum Materials; Teacher-Developed Materials; Laboratory Manuals

D Directories; Membership Lists; Table of Organization; Reference Works Dealing with Organizations/Institutions; etc.

G Guides; Teaching Guides; Resource Guides; Study Guides; Administrative Guides; Leaders Guides; Manuals; Training Manuals

H Legislation, Legislative Hearings, Legislative Reports, Congressional Documents. (Include both Federal and State levels; include National Commissions). Court Cases and Decisions (all levels).

J Journal Articles; Series; Periodicals; Bulletins; Newsletters; Newspapers; etc.

K Program/Project Descriptions; Implementation Efforts

L Bibliographies; Annotated Bibliographies; Book Catalogs; Abstracts; Literature Reviews; Literature Searches/Guides; Book Lists; Book Reviews; Library Guides; Indexes (Locators); State-of-the-Art Reviews

M Maps; Atlases; Gazetteers

N Numerical and Statistical Tables; Quantitative Data and Analyses

O Other

P Proceedings; Conference Records/Minutes (entire)

Q Questionnaires; Tests; Measurement Devices; Evaluation Devices

R Research Reports; Technical Reports; Studies

S Speeches; Conference Reports; "Papers presented at ...," Verbal Presentations; etc., (not otherwise classifiable)

T Theses; Dissertations

V Dictionaries; Vocabularies; Glossaries; Thesauri

Y Annual Reports; Yearbooks

APPENDIX B

ANALYSIS OF CROSS CLASSIFICATION TABLES

Although many powerful techniques exist for the analysis of qualitative data (e.g., log-linear models, multi variate analysis, regression analysis), we deliberately confined our exploratory analysis, to a simple, three-step process:

1. examination of the cross classification tables for all pairs of content analysis variables,

2. performing chi square tests on cross classification tables that were modified, if necessary, to avoid low expected cell frequencies, and

3. computing and examining adjusted residuals if the chi square test is significant.

In general we deleted or combined classes to the point where at least 80 percent of the expected cell frequencies were greater than 5, and all remaining were greater than 1. Classes were combined only if the combination was logically sensible, and the observed frequencies for the two classes were at least roughly proportional. When a significant chi square was found, we proceeded to examine the pattern of cell residuals. Haberman (Shelby J. Haberman, Analysis of Qualitative Data: Volume 1, Introductory Topics. New York, NY: Academic Press, 1978, p. 111, p. 121) recommends computing adjusted residuals since they have approximate standard normal distributions under tests of the models of independence or homogeneity.

The adjusted residual formula is:

$$AR_{ij} = \frac{n_{ij} - (n_i^A \, n_j^B / N)}{\left\{ n_i^A \, n_j^B \, [1-(n_i^A/N)] \, [1-(n_j^B/N)] \, /N \right\}^{1/2}}$$

where n_{ij} is the observed frequency for the i-th row and j-th column,

n_i^A is the marginal total for the i-th row,

n_j^B is the marginal total for the j-th column,

N is the grand total for the cross classification table.

The numerator in this formula is the (signed) difference between the observed and expected cell frequencies. The denominator is an estimate of the variance of this difference. Assuming a multinomial distribution and a sufficiently large N (both true for this ERIC content analysis study), each adjusted residual is approximately distributed as a standard normal variable, with mean zero and variance equal to 1.0. Although one should be cautious in interpreting probabilities for a single adjusted residual, examination of the set of adjusted residuals is practically useful in detecting the cells where the observed frequencies are far greater or smaller than they should be.

In our analysis we have flagged with asterisks those adjusted residuals whose probabilities were less than .05 or .001. We have consistently required an .05 level or higher when stating that a significant difference exists.

APPENDIX C

ADDITIONAL RIE ANALYSES

The reader may have noted that state location of the first author and ERIC clearinghouse information was coded for each RIE entry. These data were examined but deleted from the text to slightly simplify the description of an already extremely tedious analysis. Data on these two classification variables are presented in this appendix.

State location. Table C1 displays the frequency counts for the total sample and for each of the five equity group samples by state, with states listed in descending order of total frequencies. Since previous studies of geographic distribution of ERIC document production have shown that state population is highly correlated with ERIC document counts, the two right columns of Table C1 give the rank order for the RIE total and for the state (1975) population. When we inspect these ranks, we see that the District of Columbia is an obvious anomaly since it would rank third in the RIE count, but 44th in population. Excluding the District of Columbia and the territories, we find that the rank order correlation between RIE counts and population for the 50 states is .80. Thus, even for RIE documents dealing only with these five equity groups and four topics, there is a strong, but far from perfect, relation between the population of the state and its contribution to RIE equity literature. We have already noted that the District of Columbia produces a proportion of the sample of RIE documents that is far out of proportion to its population. Indeed only the two largest states, California and New York, are more productive. As the center of federal effort, a headquarters for associations and councils, and a location of many non-profit and for-profit agencies, this disproportionality is easily explained. States whose RIE rankings exceed their population rankings by ten or more ranks are: Wisconsin, New Mexico, Arizona, Wyoming, Alaska, and Delaware. States whose population rankings exceed their RIE rankings by ten or more ranks include: New Jersey, Louisiana, Arkansas, and Tennessee. Although inspection of the state data for specific equity groups sometimes provides a plausible reason for these discrepancies (e.g., New Mexico and Arizona, as well as California and Texas, contribute to the Hispanic literature which might be traced to their large Mexican American populations), the sample sizes for most states are too small to provide reliable conclusions about specific states.

However, the RIE sample is large enough to permit a regional analysis. Table C2 displays the cross tabulation of the RIE sample for five equity groups and for the four U.S. census regions, the District of Columbia, and other (Canada and foreign) regions. The right hand column of Table C2 displays the expected values for entries in each row. (Since there are 100 cases for each equity group, these entries may be read as either observed frequencies or as percentages.) Significant discrepant values have been flagged with asterisks. We see that

TABLE C1

STATE LOCATION OF RIE DOCUMENT
FIRST AUTHORS FOR TOTAL SAMPLE AND FOR FIVE EQUITY GROUPS

	TOTAL	PH	MH	B	H	W	STATE RIE RANK	STATE POP. RANK
New York	95	23	17	21	19	15	1	2
California	70	12	9	8	29	12	2	1
District of Columbia	54	17	5	12	5	15	-	-
Texas	33	1	2	10	19	1	3	3
Illinois	22	4	8	1	3	6	4	5
Massachusetts	17	4	5	3	1	4	5	10
Wisconsin	16	2	6	2	1	5	6	16
Michigan	14	0	2	3	3	6	7	7
Ohio	13	3	2	3	1	4	8	6
Maryland	11	3	2	4	2	0	9	18
Florida	9	2	3	4	0	0	10.5	8
Pennsylvania	9	1	2	4	0	2	10.5	4
Georgia	8	1	1	5	1	0	12	14
North Carolina	7	0	2	1	0	4	14	11
New Mexico	7	1	0	1	3	2	14	37
Virginia	7	3	3	0	0	1	14	13
Arizona	6	1	0	0	2	3	18.5	32
Iowa	6	1	2	0	0	3	18.5	25
Indiana	6	0	2	2	1	1	18.5	12
Minnesota	6	0	2	3	1	0	18.5	19
Missouri	6	2	3	0	0	1	18.5	15
Wyoming	6	0	3	1	1	1	18.5	49
Connecticut	5	1	2	0	2	0	23	24
Colorado	5	2	1	1	1	0	23	28
Oregon	5	2	2	0	1	0	23	30
Alabama	4	2	2	0	0	0	28	21
Kentucky	4	1	1	0	0	2	28	23
Mississippi	4	0	0	3	0	1	28	29
South Carolina	4	2	1	0	0	1	28	26
West Virginia	4	2	2	0	0	0	28	31
New Jersey	4	0	1	2	1	0	28	9
Washington	4	0	1	1	1	1	28	22
Kansas	3	0	1	0	0	2	32.5	31
Oklahoma	3	0	1	0	0	2	32.5	27
Louisiana	2	1	0	0	0	1	34	20
Alaska	1	1	0	0	0	0	36	50
Delaware	1	0	1	0	0	0	36	47
Guam	1	0	0	0	1	0	-	-
Puerto Rico	1	0	0	0	1	0	-	-
Rhode Island	1	0	1	0	0	0	36	39
Arkansas	0	0	0	0	0	0	44	33
Hawaii	0	0	0	0	0	0	44	40
Idaho	0	0	0	0	0	0	44	41
Maine	0	0	0	0	0	0	44	38
Montana	0	0	0	0	0	0	44	43
Nebraska	0	0	0	0	0	0	44	35
Nevada	0	0	0	0	0	0	44	46
New Hamphire	0	0	0	0	0	0	44	42
North Dakota	0	0	0	0	0	0	44	45
South Dakota	0	0	0	0	0	0	44	44
Tennessee	0	0	0	0	0	0	44	17
Utha	0	0	0	0	0	0	44	36
Vermont	0	0	0	0	0	0	44	48
Virgin Islands	0	0	0	0	0	0	-	-
Canada	7	2	2	0	0	3	-	-
Foreign	5	3	0	1	0	1	-	-
No location	4	0	0	4	0	0	-	-
TOTAL	500	100	100	100	100	100		

TABLE C2

REGIONAL LOCATION OF RIE DOCUMENT
FIRST AUTHORS FOR FIVE EQUITY GROUPS
(X^2= 58.29; p = .0001)

CENSUS REGIONS	PHYSICALLY HANDICAPPED	MENTALLY HANDICAPPED	BLACKS	HISPANICS	WOMEN	AVERAGE (EXPECTED)
Northeast	29	28	30	23	21	26.2
Northcentral	12	28**	14	10**	28**	18.4
South (- D.C.)	18	21	27	22	13**	20.2
West	19	16	12**	38***	19	20.8
District of Columbia	17**	5**	12	5**	15	10.8
Other	5	2	5	2	4	3.6
TOTAL	100	100	100	100	100	

the Northeast Census region displays no significant discrepancies, but all other regions have one or more. The Northcentral region contributes significantly more than expected to the RIE literature for the mentally handicapped and for women, but significantly less than expected to the literature for Hispanics. The South has only one discrepancy, a lower than expected contribution to the RIE literature on women. The West produces significantly less than expected to the literature on Blacks, but far more than expected to the literature on Hispanics. Finally, the District of Columbia displays three significant discrepancies. It contributes more than the expected amount to the physically handicapped literature, but far less than expected to the literature on the mentally handicapped and on Hispanics.

We thus see that there are significant regional differences in proportional contribution to the literature for all five equity groups.

ERIC Clearinghouse accessions. The data displayed in Tables C3 and C4 incorporate the CIJE data presented in Tables 13 and 14 (pp. 43 and 45), along with comparable data on RIE accessions. The RIE percentage preceeds the "/" mark with the CIJE percentage following. Clearinghouses have been ordered by the All Groups percentages for RIE accessions. Turning to Table C3, we first note that there has been some reordering of clearinghouses (CHs) as listed in Table 13. CG, which had the highest percentage of CIJE accessions, has dropped to fifth rank on RIE accessions. EC, which was second for CIJE, has moved to

first for RIE, accounting for 23.4 percent of all RIE accessions. CE, which was fourth in CIJE accessions (9.9%), moves to second place with 19.8 percent of all RIE accessions. UD and RC are the third and fourth highest, accessing 16.4 percent and 13.6 percent of the RIE samples. We note that the RIE cumulative percentage for these first four CHs (73.2%) just matches the CIJE cumulative percentage for the highest five CHs (73.4%, see Table 13); The top five CHs listed in Table C3 account for more than 80 percent of the RIE accessions. None of the remaining CHs access more than three percent of the RIE sample. And, again, all 16 CHs are represented in the sample; however, SE barely made it by contributing just one document to the mentally handicapped/ curriculum sample.

TABLE C3

PERCENTAGES OF RIE DOCUMENTS/CIJE JOURNAL ARTICLES FOR EACH OF FIVE GROUPS PROCESSED BY ERIC CLEARINGHOUSES

ERIC CLEARINGHOUSE	CODE	PHYSICALLY HANDICAPPED N=100 N=83	MENTALLY HANDICAPPED N=100 N=100	BLACKS N=100 N=100	HISPANICS N=100 N=100	WOMEN N=100 N=100	ALL GROUPS N=500 N=483	RIE CUM % =RIE N =CIJE N
Handicapped and Gifted Children	EC	39/11%	76/77%	1/3%	0/0%	1/0%	23.4/18.4%	23.4%
Adult, Career, and Vocational Education*	CE	34/23	14/4	14/10	2/5	35/10	19.8/9.9	43.2
Urban Education	UD	5/0	1/1	47/32	24/21	5/4	16.4/12.0	59.6
Rural Education and Small Schools	RC	2/2	0/0	9/1	49/27	8/4	13.6/7.0	73.2
Counseling and Personnel Services	CG	8/51	2/8	8/21	4/18	19/37	8.2/26.1	81.4
Junior Colleges	JC	7/0	0/0	2/2	2/2	4/2	3.0/1.2	84.4
Languages and Linguistics	FL	0/0	0/0	1/1	11/3	0/3	2.4/1.4	86.8
Social Studies/Social Science Education	SO	0/0	0/0	3/5	0/7	9/2	2.4/2.9	89.2
Reading and Communication Skills	CS	1/1	1/1	3/3	3/1	2/5	2.0/2.3	91.2
Higher Education	HE	0/1	0/0	4/3	0/3	6/14	2.0/4.3	93.2
Elementary & Early Childhood Education**	PS	2/0	2/1	0/3	1/1	3/4	1.6/1.9	94.8
Tests, Measurement, and Evaluation	TM	0/0	2/1	3/2	1/0	2/2	1.6/1.0	96.4
Teacher Education	SP	1/6	0/3	3/1	1/1	1/1	1.2/2.3	97.6
Educational Management	EA	0/0	0/0	1/2	0/3	4/1	1.0/1.?	98.6
Information Resources	IR	1/1	0/1	0/1	1/1	1/0	0.6/0.8	99.2
Science, Mathematics, & Environmental Education	SE	0/0	1/1	0/0	0/1	0/3	0.2/1.0	99.4
Not Assigned or LEASCO	AA	0/4	1/2	1/10	1/6	0/8	0.6/6.0	100.0
Total		100	100	100	100	100	100.0/99.7	

* formerly CAREER EDUCATION
** formerly EARLY CHILDHOOD EDUCATION

When we compare the RIE/CIJE percentages for specific CHs for particular groups, we note a number of statistically significant differences. EC provides 39 percent of the RIE documents but only 11 percent of the CIJE articles to the physically handicapped samples. CE provides significantly more documents than journal articles to three groups: physically handicapped (34/23), mentally handicapped (14/4), and women (35/10). UD also provides significantly more RIE documents than CIJE articles to the Blacks sample (47/32). RC does the same for Blacks (9/1) and for Hispanics (49/27). However, CG contributes fewer RIE documents than CIJE acticles to all groups, and statistically significantly fewer to four of these groups: physically handicapped (8/51), Blacks (8/21), Hispanics (4/18), and women (19/37). JC, which made no CIJE contribution to the physically handicapped, accounts for seven percent of the RIE sample for this group. FL contributes significantly more RIE than CIJE items to the Hispanic sample (0/7), but significantly more RIE than CIJE items to the women sample (9/2).

Considered group by group, we note that EC and CE are the major RIE contributors to the physically handicapped, while CG is the major CIJE contributor for this group. EC accounts for over three-fourth of the mentally handicapped samples for both RIE and CIJE, but CE and RC are second and third for RIE contributions, while CG and CE are second and third for CIJE contributions. RC falls just short of contributing half (49%) of all RIE documents in the Hispanic sample, while it contributes only a fourth (27%) of the CIJE articles to this group. CD is the second largest contributor to Hispanics for both RIE (24%) and CIJE (21%). The surprise in the RIE analysis is that FL, which was tied for 6th place (at 3%) in the CIJE analysis, is the third largest RIE contributor to Hispanics (11%). CE is the largest RIE contributor to women (35%), followed by CG (19%), SO (9%), RC (8%), HE (6%), and UD (5%). Overall, the women and the Blacks samples show the greatest scatter in CH contribution, while the mentally handicapped is the most concentrated.

Turning now to the counts by topics displayed in Table C4, we again note a series of statistically significant differences between RIE and CIJE contributions by CHs to particular topics. EC is perhaps remarkable for the fact that its "across the board" topical coverage (primarily for the mentally handicapped group) displays approximately the same percentages for both RIE/CIJE for each of the four topics. We note that CE contributes significantly more RIE and CIJE items on employment (39/23) and on counseling (19/6). UD and RC also do the same on counseling (20/5 and 14/4 respectively). However, CG contributes significantly fewer RIE than CIJE items to the counseling samples (14/60), and also to the attitudes samples (10/20). The only other significant difference is that HE, which contributes nine percent of the CIJE articles on curriculum, contributes only two percent of the RIE documents on curriculum (2/9). Overall, perhaps the most significant difference for topics between the RIE and the CIJE analysis seems to be the far greater scatter in the RIE counseling sample, where five CH contribute between 14 and 22 percent each, as contrasted to the case for CIJE, where CG alone contributes 60 percent of all articles on counseling. Thus, in the RIE analysis,

TABLE C4

PERCENTAGES OF RIE DOCUMENTS/CIJE JOURNAL ARTICLES FOR EACH OF FOUR TOPICS PROCESSED BY ERIC CLEARINGHOUSES

ERIC CLEARINGHOUSE	CODE	ATTITUDES	EMPLOYMENT	COUNSELING	CURRICULUM	ALL TOPICS
		RIE N=125 CIJE N=125	N=125 N=125	N=125 N=125	N=125 N=108	N=500 N=483
Handicapped and Gifted Children	EC	29/21%	14/17%	22/16%	30/20%	23.4/18.4%
Adult, Career, and Vocational Education*	CE	10/4	39/23	19/6	10/6	19.8/9.9
Urban Education	UD	15/14	15/18	20/5	15/12	16.4/12.0
Rural Education and Small Schools	RC	15/10	16/8	14/4	10/6	13.6/7.0
Counseling and Personnel Services	CG	10/20	4/18	14/60	4/3	8.2/26.1
Junior Colleges	JC	4/1	3/0	3/0	2/5	3.0/1.2
Languages and Linguistics	FL	2/2	0/1	1/0	7/4	2.4/1.4
Social Studies/Social Science Education	SO	2/4	2/2	0/0	6/6	2.4/2.9
Reading and Communication Skills	CS	3/5	2/1	0/1	2/3	2.0/2.3
Higher Education	HE	0/0	2/6	3/2	2/9	2.0/4.3
Elementary & Early Childhood Education**	PS	2/5	0/0	2/1	2/2	1.6/1.9
Tests, Measurement, and Evaluation	TM	3/3	0/0	1/0	2/1	1.6/1.0
Teacher Education	SP	2/2	0/2	0/1	2/5	1.2/2.3
Educational Management	EA	0/1	2/2	0/0	2/3	1.0/1.2
Information Resources	IR	0/1	0/1	0/0	2/2	0.6/0.8
Science, Mathematics, & Environmental Education	SE	0/2	0/0	0/0	1/3	0.2/1.0
Not Assigned or LEASCO	AA	1/8	0/2	2/4	0/10	0.6/6.0
TOTAL		98/103	99/101	101/100	99/100	100.0/99.7

* formerly CAREER EDUCATION
** formerly EARLY CHILDHOOD EDUCATION

we find no CH "dominating" a topic by contributing 50 percent or more to that topic. The closest contender would be CE, which contributes 39 percent of the RIE documents on employment. In no other case does a single clearinghouse contribute more than 30 percent of the RIE documents to any topic. The situation for groups is different. Turning back to Table C3, we note that EC contributes 76 percent of all RIE documents to the mentally handicapped, UD provides 47 percent of all RIE documents on Blacks, and RC provides 49 percent of all RIE documents on Hispanics. EC and CE together provide 73 percent of all RIE documents on the physically handicapped. It is only in the women sample that one or two CHs fall short of accounting for half or more of the sample, but three CHs (EC, CE, UD) will do nicely with nearly 60 percent of the women's RIE literature.

To summarize, there are some significant differences between the patterns of ERIC Clearinghouse accession for RIE as compared to CIJE. The general tendency is for smaller numbers of CHs to account for larger proportions of the RIE than the CIJE samples, overall, and for most groups. However, there appears to be a more even spread for topics among the top four or five CHs in the RIE samples as compared to CIJE. These differences between RIE and CIJE can be accounted for rather easily if one recalls that RIE is concerned with single documents that are acquired by or assigned to CHs or exchanged among CHs. But journal titles, not the individual journal articles, are assigned to CHs. Thus, in most instances, a single CH will abstract and index all pertinent articles in an assigned journal regardless of the specific content. This difference may account for some, perhaps most, of the differences among CHs in their representation in these RIE and CIJE samples. However, in the overall pattern, there are more similarities than differences. Generally, it takes at least two or three CHs to cover most of the literature for any particular group or topic. Only rarely will one CH handle most of the literature. (The exceptions are EC for the RIE and CIJE literature on the mentally handicapped and CG for CIJE counseling topics.) Although a few CHs, but rarely one CH, can be expected to handle most of the literature, most of the CHs will make some contribution. The practical consequences of these findings may be to help pinpoint the few CHs that seem to be handling the great bulk of the literature for any particular equity group with respect to the four topics considered in this study.